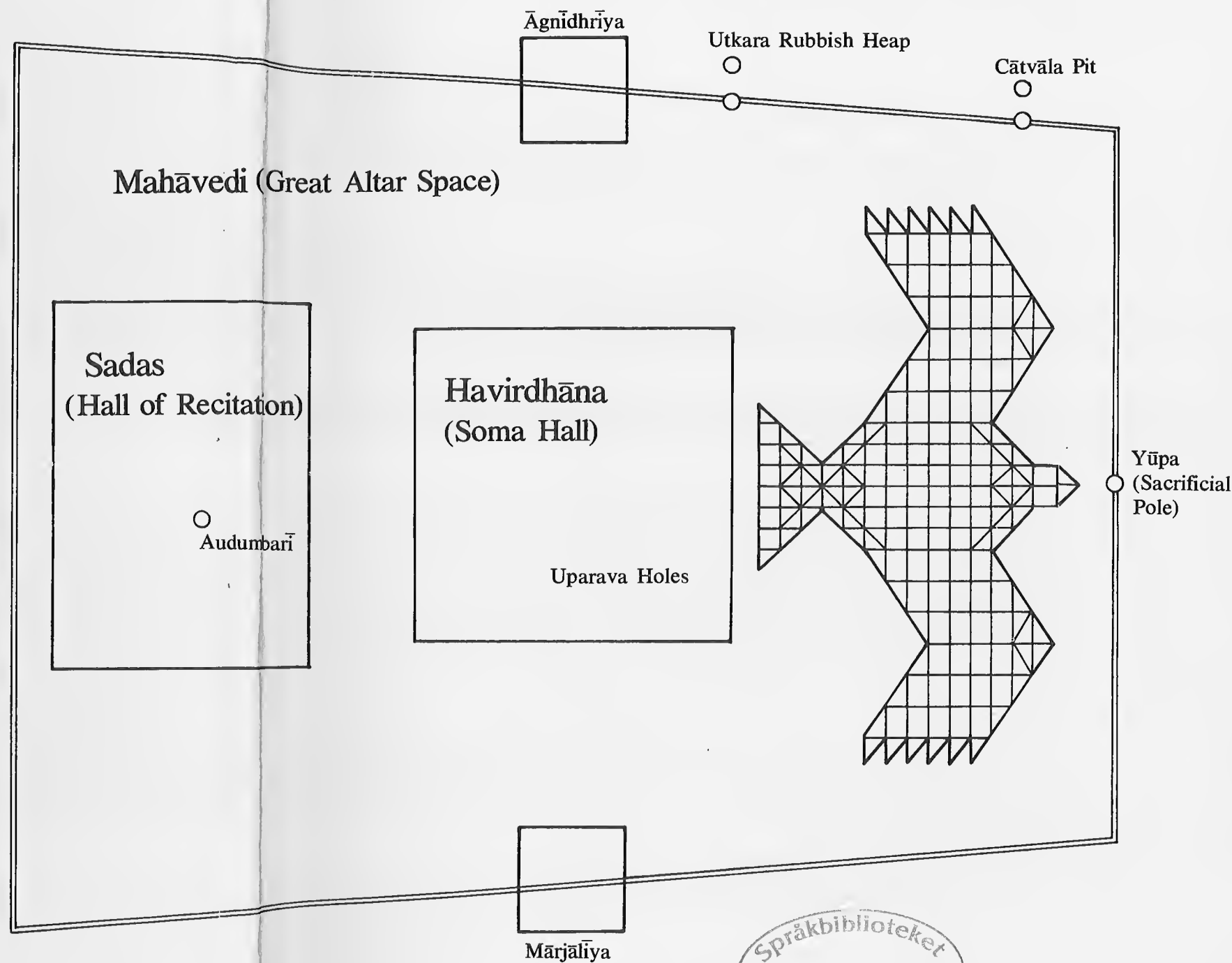
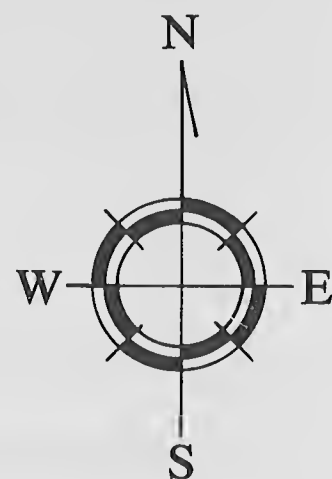
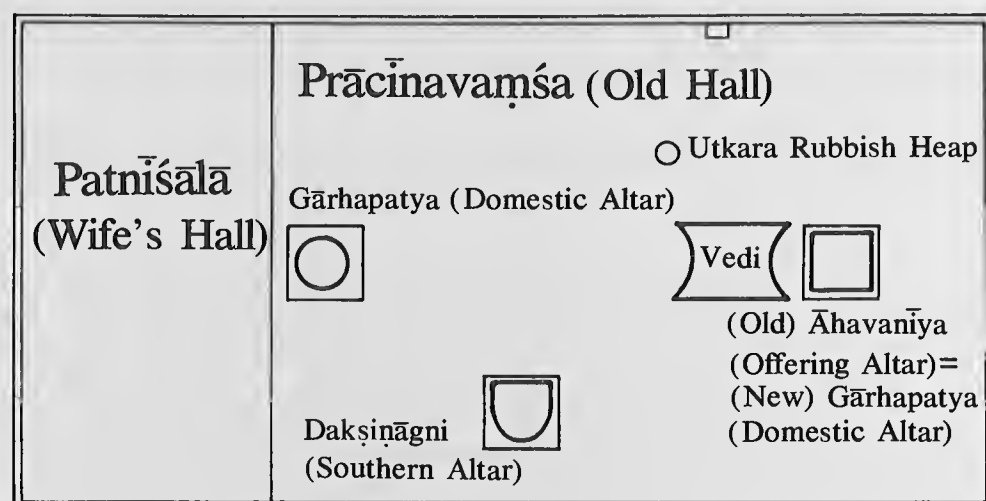


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AGNI

THE VEDIC RITUAL OF THE FIRE ALTAR

VOLUME II

Edited by Frits Staal

with the assistance of
Pamela MacFarland

ASIAN HUMANITIES PRESS
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PREFACE

THE 1975 PERFORMANCE of the Atirātra-Agnicayana called attention to a ritual created in India almost three thousand years ago. The first volume of *Agni* sought to document and help preserve this ancient tradition. The ceremonies were described and depicted in explicit detail because of their intrinsic cultural value, because they provide the source material for many developments in Indian religion, and also because they can be used to confirm, revise, or reject general theories of ritual and religion.

This second volume of *Agni* probes more deeply into the authenticity of the Nambudiri Vedic tradition and seeks at the same time to explain how such a survival could occur. It shows that much is in fact known about the background, context, and history of the tradition, though some of this information is circumstantial and much of it is difficult of access. As a result of these investigations, the history of the religions of India now appears in a new light: though Vedic beliefs and doctrines have disappeared or been transformed, Vedic practice has in fact continued. This is significant especially in India, where practice—*karman*—has always been more important than theory. The truth has escaped Indologists who confine themselves to texts and doctrines, and anthropologists who merely scratch the surface. It has been further obscured by the popularization of artificial distinctions like that between so-called Great and Little Traditions.

The second volume begins with Part III, "Perspectives," a series of contributions by scholars who elucidate the ritual, its background, and its many dimensions. Part IV, "Texts and Translations," provides sections from ritual manuals of the three Vedic schools represented in the 1975 performance. Part V is concerned with the audiovisual documentation of the Agni ceremony.

Part III opens with historical studies by Thapar, Parpola, Heesterman, and Seidenberg. The perspectives adopted in these speculations are diverse; together they remind us of important gaps in our knowledge of early Indian history, and they show us that our widely held assumptions about an Aryan invasion are not only simplistic but also questionable. Staal then analyzes the syntax of the ritual. There follow philological articles primarily concerned with Sanskrit texts: Tsuji examines a Yajurvedic tradition that differs from that followed in 1975; Sreekrishna Sarma studies the Ṛgvedic sources underlying the 1975 performance; and Ikari explores a historical link between the Agnicayana and the Pravargya ceremony. Balasubrahmanya Sastri illustrates how the Agnicayana has been treated in a later philosophic development.

Although the continued existence of grhya rites among the twice-born castes is well known, the survey by Kashikar and Parpola shows how Vedic śrauta traditions, too, are alive in many regions of the Indian subcontinent. The subsequent eight papers focus on the Nambudiri tradition and elucidate

features of Nambudiri Vedic culture. The picture that emerges modifies the common view that Vedic civilization disappeared and was in due course replaced by Hinduism. What we witness is in fact the continued existence of Vedic traditions, though often in remote areas. At the same time, many Indian traditions entered a new phase, which it is customary to call Tantric. This development can be traced in Kerala and among the Nambudiris, but its chief impact has been elsewhere. It is not within the scope of this book to treat the Tantric fire rites that have proliferated all over India during the last two thousand years. However, contributions by Hooykaas, Skorupski, and Strickmann show the extent to which such ceremonies spread over large parts of Asia. After depicting a culmination of these Tantric rites in the fiery meditations of Japan, Part III ends with an account of mundane events and practical affairs that pervaded and accompanied the Agnicayana project.

The texts and translations of Part IV appropriately begin with sections from the Baudhāyana Śrautasūtra, which is the most detailed and precise of the sūtras, and probably the earliest. The material presented by Ikari and Arnold is the counterpart of the description in Part II, and makes possible a step-for-step comparison of the ritual as it was before 600 B.C. with the 1975 performance. The contributions that follow supplement the Yajurvedic data with the Atirātra recitations from the R̥gveda and the Agnicayana chants from the Sāmaveda.

The contents of the two volumes reflects a variety of disciplines. The emphasis in Part II may be characterized as anthropological or ethnographical; it represents Vedic fieldwork. Such fieldwork can be undertaken only by Sanskritists, but all too few have availed themselves of the opportunity. By contrast, the information provided in Parts III and IV is largely historical and philological. Though these contrasting approaches may seem incompatible, they are coherent from the Nambudiri, or indeed from the Indian, point of view. It is not surprising, therefore, that the descriptions offered in Parts II and IV are often extremely similar in spite of their different orientation. Both descriptions differ in points of detail, but they exhibit the same structure and spirit. If the Nambudiris conceive of the ritual in the manner of the authors of the ancient manuals, it is not because they imitate the manuals; it is because they embody the same tradition.

Part V of the second volume gives brief surveys of the twenty hours of film footage and the eighty hours of recordings with which we returned from India. The forty-five-minute film *Altar of Fire*, edited from these materials, presents primarily the Nambudiri point of view: it consists of a succession of episodes suggested by Cherumukku Vaidikan. The contents of the cassette tapes that accompany this book are described in the third section of Part V.

Collecting contributions from an international group of scholars has been challenging, time-consuming, and rewarding. Though the original style

of the contributions has been largely retained, a certain amount of standardization has been done, and overlaps have been minimized. Since English is not the native tongue of most of the authors, nor of the editor, considerations of style have required much attention. In all these tasks I have been fortunate in having the assistance of my judicious coeditor, Pamela MacFarland. As in the case of the first volume, most of the papers have been typed by Ruth Suzuki with her customary, yet miraculous, speed. The burden of completing a variety of smaller tasks was much eased by support from the Department of South and Southeast Asian Studies and the Committee on Research of the University of California at Berkeley.

The plates for this volume come from a greater variety of sources than was the case in the first volume. Acknowledgments are due to the Department of History and Archaeology, Karnatak University (for Plate 1); Professor G. R. Sharma (Plates 2-4); the Archaeological Survey of India (Plates 5-6); E. J. H. Mackay, *Chanhu-Daro Excavations 1935-36* (Plate 7A); E. J. H. Mackay, *Further Excavations at Mohenjo-Daro* (Plate 7B); The Ashmolean Museum, Oxford (Plate 8); Krishnan Nair Studies, Shoranur (Plates 12-13); Shōren-in, Kyoto (Plate 14); Kuo Li-ying (Plates 15-17); and Adelaide de Menil (Plates 9-11, 18-23). The illustrations in the text and the numerous maps have again been drawn by Adrienne Morgan with meticulous care. Dr. W. M. Callewaert of the Department of Oriental Studies, Leuven, Belgium, has assisted with the map of Andhra Pradesh. Figures 28-31 are reproduced from *The Creation of Maṇḍalas: Rong tha blo bzang dam chos rgya mtsho*, Volume 3.

The materials presented in this second volume range far in time and space. Though all are reverberations of Agni and add dimensions to the Nambudiri Agni, do they place the Nambudiri tradition itself in a new perspective, and do they teach us anything else that is new?

It would be tempting to claim that this extremely ancient tradition admirably fills the gap between the great literary traditions of mankind and many surviving traditions in preliterate societies that are now beginning to be studied. Attractive as this speculation is, I shall descend to a less lofty level of conjecture that is still replete with general questions. For example, how different is the Vedic religion of the Nambudiris from the original Vedic religion? How do Vedic and Hindu elements blend, mingle, or coexist in the Nambudiri tradition? And what light does this throw on the concepts of tradition and religion?

When answering the first question, one might begin with the stark contrast that becomes immediately apparent from a comparison of the section on Vedic nomads with that on the Nambudiri tradition in the first volume. While the Vedic nomads were aliens migrating into a new country where they came in contact with the remnants of an unfamiliar civilization, the Nambudiris are settled villagers and established country gentlemen occupying the highest ranks in their caste society. The Vedic

PREFACE

religion, however, has remained the same in at least one respect. Agni is the same fire reinforced by mantras and oblations whose name continues to be familiar from chants and recitations. Agni is not a deity like Śiva, Viṣṇu, or Bhagavatī, whose images are installed in temples. The Vedic religion of Agni and Soma is as nonanthropomorphic in the Nambudiri tradition as it was during the Vedic period. One reason for Agni's continuing identity is this nonanthropomorphism, which makes it possible for him or it to be carried in an earthen pot. It is in the nature of things that men and anthropomorphic deities are more readily susceptible to change than such nonanthropomorphic substances as Agni.

How then are Vedic and Hindu elements related in the Nambudiri tradition? What students of religion in the West yearn for, of course, is Integration. When we ask the performers "Are you Vedic Indians or Hindus?" the answer is "We are Vaidika Nambudiris." From this we might conclude that things that seem to be incompatible to us are harmoniously One in the mysterious orient. But let us not get entangled too soon in our own confusions. To understand the Nambudiri answer adequately we have to move to a more sophisticated level of conceptual analysis. To begin with, we have to question those rubrics of religion we have come to use with such facile abandon. The labeling of elements as "Vedic" or "Hindu" may reflect a historical perspective, but it throws scant light on the synchronic relations between these elements, and has nothing to do with religion. The same holds for the Harappan and Indo-European features of the Agnicayana itself, where such labeling is even more obviously historical. All such labels are imposed by scholars, laymen, and other outsiders. Their value lies in historical and comparative analysis; but we use them at our peril when we forget that they are inherently artificial.

The concept of religion is a Western concept, and though its origin is Roman, it has been colored by its age-long associations with the monotheisms of the West. Western religion is pervaded by the notion of exclusive truth, and it claims a monopoly on truth. It is professed by "People of the Book," in the apt phrase the Koran uses to refer to Jews, Christians, and Muslims. Scholars and laymen persist in searching for such religions in Asia. In order to identify them, they seize upon labels from indigenous categories, rent from their original contexts. Thus there arises a host of religions: Vedic, Brahmanical, Hindu, Buddhist, Bonpo, Tantric, Taoist, Confucian, Shinto, etc. In India, and in Asia generally, such groupings are not only uninteresting but uninformative and tinged with the unreal. What counts instead are ancestors and teachers—hence lineages, traditions, affiliations, cults, eligibility, initiation, and injunction—concepts with ritual rather than truth-functional overtones. These notions do not pertain to questions of truth, but to practical questions: What should the followers of a tradition *do*? This is precisely what makes such notions pertain to the domain of karman. Hence orthopraxy, not orthodoxy, is the operative concept in India. The Veda, for

PREFACE

example, is not a sacred book: its power lies in mantra, and mantra is vidhi, that is, an injunction to karman: "Speaking, it is of karman that they speak; and praising, it is karman that they praise" (Bṛhad-Āraṇyaka-Upaniṣad 3.2.13).

The structures of these Asian traditions are related and unrelated to Western patterns of religion, culture, thought, and society in a myriad ways. The term religion, however, has been applied in a clear and helpful manner only to Christianity, Judaism, and Islam. It is of limited applicability to Buddhism and to the bhakti cults of Śaivism and Viṣṇuism. Elsewhere it leads to a meaningless proliferation of problems. In the only intelligible sense of the term, there are no indigenous religions in India.

San Francisco

FRITS STAAL

ABBREVIATIONS

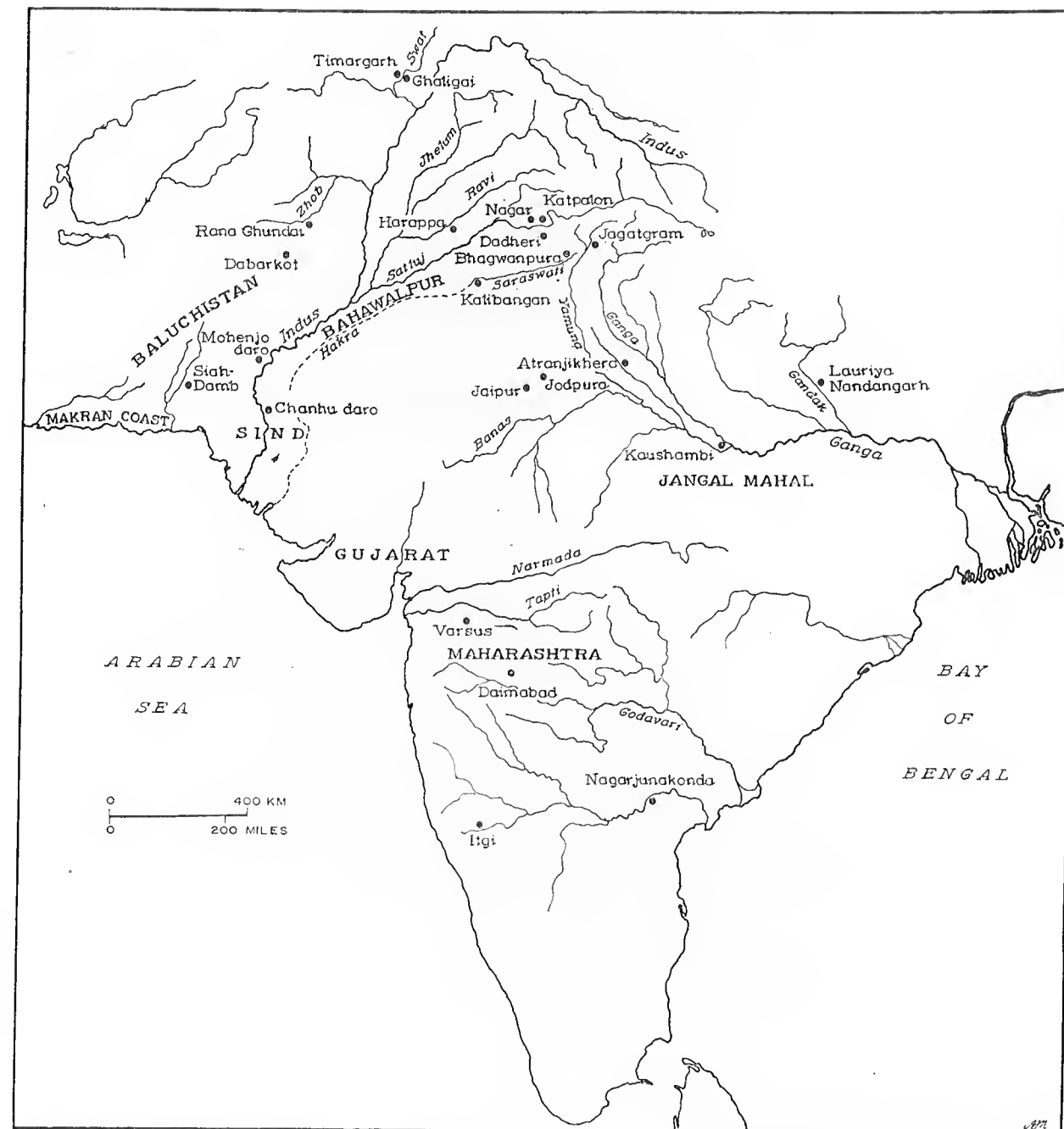
AA	Aitareya Āraṇyaka
AB	Aitareya Brāhmaṇa
AG	(Jaiminīya) Araṇyageyagāna
ĀpGS	Āpastamba Gṛhya Sūtra
ĀpŚS	Āpastamba Śrauta Sūtra
ĀpŚulvaS	Āpastamba Śulva Sūtra
ĀGS	Āśvalāyana Gṛhya Sūtra
ĀŚS	Āśvalāyana Śrauta Sūtra
AV	Atharvaveda Saṃhitā
BĀU	Bṛhad Āraṇyaka Upaniṣad
BGS	Baudhāyana Gṛhya Sūtra
BhārŚS	Bhāradvāja Śrauta Sūtra
BŚS	Baudhāyana Śrauta Sūtra
BŚulvaS	Baudhāyana Śulva Sūtra
CU	Chāndogya Upaniṣad
GG	(Jaiminīya) Grāmageyagāna
GobhGS	Gobhila Gṛhya Sūtra
HirGS	Hiraṇyakeśi Gṛhya Sūtra
HirŚS	Hiraṇyakeśi Śrauta Sūtra
JA	Jaiminīya Ārcika
JB	Jaiminīya Brāhmaṇa
JŚS	Jaiminīya Śrauta Sūtra
KapS	Kapiṣṭhala Saṃhitā
KŚS	Kātyāyana Śrauta Sūtra
KŚulvaS	Kātyāyana Śulva Sūtra
KB	Kauṣītaki Brāhmaṇa
KhādGS	Khādīra Gṛhya Sūtra
KS	Kāṭhaka Saṃhitā
KU	Kena Upaniṣad
LŚS	Lāṭyāyana Śrauta Sūtra
MānŚS	Mānava Śrauta Sūtra
MS	Maitrāyaṇī Saṃhitā
MU	Maitrāyaṇīya Upaniṣad
PārGS	Pāraskara Gṛhya Sūtra
PB	Pañcaviṃśa Brāhmaṇa
RV	Ṛgveda Saṃhitā

SV	Sāmaveda Saṃhitā
ŚB	Śatapatha Brāhmaṇa
ŚGS	Śāṅkhāyana Gṛhya Sūtra
ŚŚS	Śāṅkhāyana Śrauta Sūtra
TA	Taittirīya Āraṇyaka
TB	Taittirīya Brāhmaṇa
TS	Taittirīya Saṃhitā
TU	Taittirīya Upaniṣad
VaikhŚS	Vaikhāṇasa Śrauta Sūtra
VaitŚS	Vaitāna Śrauta Sūtra
VārŚS	Vārāha Śrauta Sūtra
VS (K/M)	Vājasaneyi Saṃhitā (Kāṇva/Mādhyandina)
VŚS	Vādhūla Śrauta Sūtra

PART III
PERSPECTIVES

THE ARCHEOLOGICAL BACKGROUND TO THE AGNICAYANA RITUAL

Romila Thapar



Map A—Harappan and Vedic Sites and Excavations

FOR MANY DECADES NOW scholars have been waiting expectantly for archeology to reveal a culture that can be definitively labeled as "Aryan," but the Aryans remain elusive. It is likely that they will continue to remain so until a new definition of the term Aryan can be suggested. Such a clarification would not be entirely out of the question, considering that we are still working with a definition that derives essentially from information and concepts prevalent during the nineteenth century. Now that there is a relatively full picture of the succession of archeological cultures in northern India for the period with which the emergence of Aryan culture is associated, the continuing absence of a clearly identifiable Aryan culture may suggest that Aryanism is not an isolated, uniform culture but a system that draws on a multiplicity of cultures that remain crucial to the manifold forms it takes in time and space. In such a system, facets of what have been called Aryan culture may find correlates in archeological artifacts and assemblages, and these correlates may help us to redefine Aryan culture. The purpose of this essay is to consider whether the description of the Agnicayana and its present-day survivals are reflected in the archeological remains of the protohistoric period.

Any attempt to correlate the Agnicayana as an Aryan ritual with archeological data would require an initial assessment of the possibility of identifying the "Aryans" in the various archeological cultures known to the northern part of the Indian subcontinent during the first three millennia B.C. The earliest evidence of the Aryan-speaking peoples is available in the *R̥gveda*. The geographical area was that of the "Sapta Sindhu," generally taken to be a reference to the Indus, its five tributaries, and the Sarasvati River, which would comprise the Indus and the Sarasvati valleys (extending to the Indo-Gangetic divide) and include the northwestern borderlands. The archeological cultures of this region and its fringes and the evidence of material remains from these cultures will have to be compared with descriptions from the *R̥gveda* and from other later Vedic literature generally dated to the first millennium B.C. In the absence of an identification of Vedic culture with any specific archeological culture, the next step would be to try and correlate aspects of the Agnicayana with archeological data and see whether such correlations can be made. This essay is an attempt to examine these two questions.

A point that needs to be emphasized is that in speaking of the "Ary-

ans," the historical reference is to the establishment of a language, Indo-Aryan, over areas of the Indian subcontinent that were earlier linked with non-Aryan languages. Who the Aryans were racially is not under discussion—nor is the question of whether they were a distinct racial entity, which seems unlikely and uncertain. The only certainty is the occurrence of the language. The mechanism by which the language was introduced and gained currency is also unclear. It was earlier believed that the Aryan speakers invaded northern India, but the evidence for this is now doubted. Migration would seem a more feasible postulate, though here too a question remains as to why there was a migration, or what form it took.

A further complication is that the presence of speakers of languages derived from Indo-European is not limited to the Indian subcontinent but is intimately concerned with activities in western Asia. The area from the Tigris-Euphrates to the Indus valleys forms the geographical context of the folk movements, linguistic intrusions, and cultural changes that were the *mise-en-scène* of the Aryan question in India (although in this essay the discussion will be limited to the Indian context). Admixtures and borrowings from local cultures are evident in all the areas where the Indo-European-speaking peoples settled, and it is possible that some aspects of the later cultures derive from a community of ideas going back to the pre-Indo-European period in the third millennium B.C. when western Asia constituted an area of cultural interaction.

The chronological frame goes back to West Asian connections. The earliest recorded appearance of the Indo-European speakers associated with the horse and the chariot dates to the second millennium B.C. in the Boghaz Keui records from Anatolia, the Tell-el Amarna tablets from Egypt, and to the arrival of the Kassites in Mesopotamia.¹ The linguistic proximity of Indo-Aryan to Avestan and Old Persian would suggest a close relationship between Iran and northern India.² The linguistic bifurcation between India and Iran and the growing dissimilarities between Zoroastrianism and the Vedic religion might date to the late second or early first millennium B.C. Subsequent to the dispersal of the Indo-European speakers (assuming large-scale migrations into the Near East, Iran, and northern India), the archeological evidence should provide clues to substantial similarities between the cultures of western Asia, Iran, and northern India. Such similarities, for the moment at least, are not to be found. Beyond occasional similarities in the typology of pottery or of metal artifacts, there is little evidence to support close communication between Iran and India such as would provide an archeological counterpart to the linguistic data. Another area associated

¹ V. G. Childe, *The Aryans* (London, 1926).

² L. de la Vallée Poussin, *Indo-Européens et Indo-Iraniens* . . . (Paris, 1936); A. B. Keith, *The Religion and Philosophy of the Vedas and Upanishads*, Harvard Oriental Series, Vols. 31-32 (Cambridge, Mass., 1925); G. Cardona, ed., *Indo-European and Indo-Europeans* (Philadelphia, Pa., 1970).

with the Indo-European speakers is central Asia. Links between central Asia and northern India, which go back to the third millennium B.C., also tend to be sporadic and limited to an occasional item.³

A more substantial connection, although isolated, has been recently found in the excavation of a Chalcolithic cemetery and settlement at Sibri Domb at the foot of the Bolan pass. The site indicates a settlement of people from Central Asia, probably dating to the third millennium B.C., and suggests links with late Namazga V and early Namazga VI.⁴ The period is of course prior to that of the *R̥gveda*, and there is no indication of a sustained migration. Links with Central Asia are now known to go back to the Harappan period from other evidence as well—namely, the Harappan settlements in the Shortugai plain in Badakshan, where it is thought that Harappan traders may have been anxious to obtain the local lapis lazuli.⁵

If Aryan culture is viewed as a well-defined system uniformly spread over the Sapta Sindhu region, then only the Harappan culture provides a geographical equation.⁶ Pre-Harappan cultures of the fourth and early third millennia B.C. differ, in that the Baluchistan peasant communities are distinct from the pre-Harappan settlements on the plains of the Indus system, such as the Kot-Dijian or those sometimes referred to as the Sothi culture, although there may well have been contact between them.⁷

The former evolved from a series of Neolithic settlements of the fourth millennium B.C. along the Baluchistan borderlands. Many were abandoned during the Harappan period when the focus of settlement shifted to the Indus plains and the Sarasvati valley, although some sites in the Zhob valley were reoccupied in the post-Harappan period. Uniformity is recognizable only with the emergence of the Mature phase of the Harappan culture, which would broadly date to the second half of the third millennium B.C. The declining phase of the Late Harappan extends into the early second millennium B.C. and in some areas, such as the Punjab and Gujarat, continues to the middle of the second millennium.

Attempts to identify the Harappan culture with Vedic Aryan cultures

³ V. M. Masson and V. I. Sarianidi, *Central Asia: Turkmenia Before the Achaemenids* (London, 1972), pp. 113ff.

⁴ J. F. Jarridge and M. Lechevalier, "Excavations at Mehrgarh, Baluchistan: Their Significance in the Prehistorical Context of the Indo-Pakistan Borderlands," in M. Taddei, ed., *South Asian Archaeology: 1977* (Naples, 1979), pp. 463-535.

⁵ H. P. Frankfurt and M. H. Pottier, "Sondage préliminaires sur l'établissement protohistoriques Harapéen et post-Harapéen de Shortugai (Afghanistan du N-E)," *Arts Asiatiques*, 34 (1978), pp. 29-79.

⁶ A survey of the problem of identifying archeological cultures with the Aryans can be found in "The Study of Society in Ancient India," in Romila Thapar, *Ancient Indian Social History: Some Interpretations* (New Delhi, 1978); and B. K. Thapar, "The Archaeological Remains of the Aryans in North-western India," unpublished paper read at the Doshambe Conference, 1977.

⁷ W. Fairervis, *The Roots of Ancient India*, 2nd ed. (Chicago, Ill., 1975).

raises major problems. The chronology of the Harappan culture precedes by some centuries the presence of Indo-European speakers in west Asia and is therefore much earlier in time. In the absence of a conclusive decipherment of the Harappan script, it could be argued that the Harappans were Aryan speakers and spread westwards, but the work done so far on the script suggests the probability of a non-Aryan language.⁸ Equally significant is the divergence in the kind of society depicted in the two types of evidence. The Harappan was essentially an urban culture with a commercial orientation, whereas the R̥gvedic Aryans were primarily pastoralists and generally unfamiliar with urban living. The characteristics associated with the latter, such as the domestication of the horse, the use of the spoked wheel and the chariot, and possibly the use of iron (*kr̥ṣṇa āyas*) are absent in the Harappan sites. There are a very few sites with occasional remains of what are believed to be bones of horses.⁹ Horses are also conspicuously absent in the symbolism and designs on Harappan seals and pottery, where other animals abound. If the Aryans are to be sought in archeology, then, the search must be conducted in the post-Harappan cultures.

It is sometimes said that perhaps the R̥gvedic culture may be identified with the pre-Harappan, which would make it indigenous to India and date it to the fourth millennium B.C.¹⁰ This would imply that the Harappans, whose culture as we have seen was dissimilar to the R̥gvedic, came in from elsewhere as an advanced and intrusive culture, and dominated the main Indus valley until such time as the cities declined. The R̥gvedic people would then have formed a substratum culture, and the later Vedic literature would reflect an amalgam of the previous cultures. This raises a number of problems that cannot be solved with the existing evidence, such as the conflicting chronology of the R̥gveda and the pre-Harappan settlements, the links with Iran, and the correlation of Indian evidence with the data from West Asia that attests to the presence of Indo-European speakers. The pre-Harappan settlements of the Sapta Sindhu region are again not part of a uniform culture.

The decline of the major cities did not bring the Harappan culture to a close, since Late Harappan sites flourished in some areas on the peripheries of the Harappan heartland.¹¹ In the Indo-Gangetic divide and the upper Ganga-Yamuna Doab, Late Harappan sites were contemporary with other cultures such as the Ochre Color Pottery culture dating to the early second

⁸ A. R. K. Zide and K. V. Zvelebil, eds., *The Soviet Decipherment of the Indus Valley Script* (The Hague, 1976).

⁹ J. P. Joshi, "Excavation at Surkotada," in D. P. Agrawal and A. Ghosh, eds., *Radio-Carbon and Indian Archaeology* (Bombay, 1973), pp. 173ff.

¹⁰ A. D. Pusalkar, "Pre-Harappan, Harappan and post-Harappan Culture and the Aryan Problem," *The Quarterly Review of Historical Studies*, 7.4 (1967-68), pp. 233ff.

¹¹ B. K. Thapar, "The End of the Indus Civilisation and its Aftermath," in Uday Vir Singh, ed., *Archaeological Congress and Seminar: 1972* (Kurukshetra, 1976), pp. 1-4.

millennium B.C. Recently sites from this area have provided evidence of what has been described as an overlap phase between the Late Harappan and the major archeological culture of this area, the Painted Grey Ware culture.¹² In Gujarat, Harappan survivals continued throughout the second millennium and possibly later.¹³ Some degree of continuity is also indicated by the contemporaneity of the Black-and-red Ware culture with the Mature Harappan sites in Gujarat and its apparent spread to Rajasthan and central India in the second millennium B.C. Harappan sites have recently been found in Maharashtra, at Daimabad in the Ahmednagar District, and at Varsus in the Dhule District. The overlap of C-14 dates from the former suggests that it was contemporary with the central Indian and northern Deccan Chalcolithic. A few Harappan survivals may also be identified in the Megalithic culture of the peninsula, as for example, in the graffiti on some of the pottery.¹⁴

It is evident that the hiatus that was believed to exist between the end of the Harappan cities and the cultures that followed is now being gradually eliminated, and that the probability of survivals from the Harappan tradition into later centuries is being strengthened. These survivals and the contemporaneity of Late Harappan with other cultures lend some support to the theory that linguistically there might have been a period of bilingualism¹⁵ between the earlier non-Aryan and later Aryan speakers, and that the widespread adoption of Indo-Aryan was a gradual process extending over many centuries.

The theory of an Aryan invasion finds little support in archeology.¹⁶ The famous "massacre" at Mohenjo Daro has been questioned, as has also the notion that Indra and his hosts destroyed the cities.¹⁷ The decline of the cities is now more frequently attributed to ecological changes and the termination of trade relations with western Asia. The references quoted from

¹² J. P. Joshi, "Interlocking of Late Harappan Culture and Painted Grey Ware Culture in the Light of Recent Excavations," *Man and Environment*, 2 (1978), pp. 100-103.

¹³ G. L. Possehl, *Variation and Change in the Indus Civilisation: A Study of Prehistoric Gujarat with Special Reference to the Post-Urban Harappan*, Ph. D. dissertation, University of Chicago, 1974; S. R. Rao et al., "Excavations at Rangpur and Other Explorations in Gujarat," *Ancient India*, 18-19 (1962).

¹⁴ B. B. Lal, "From the Megalithic to the Harappa: Tracing Back the Graffiti on the Pottery," *Ancient India*, 16 (1960), pp. 4ff.

¹⁵ B. M. Emeneau, *Collected Papers* (Annamalainagar, 1967).

¹⁶ For arguments in support of the theory, see B. Allchin and R. Allchin, *The Birth of Indian Civilisation* (Harmondsworth, Eng., 1968), pp. 126ff. Other alternatives for the decline of cities have been suggested by R. L. Raikes, "The End of the Ancient Cities of the Indus," *American Anthropology*, 66.2 (1964) pp. 284-299. See also R. L. Raikes and G. F. Dales, "The Mohenjo-Daro Floods Reconsidered," *Journal of the Palaeontological Society of India*, 20 (1977), pp. 251-260.

¹⁷ G. F. Dales, "The Mythical Massacre at Mohenjo-Daro," *Expedition*, 6.3 (1964), pp. 36-43.

the R̥gveda in support of the invasion theory refer more often to settlements that had long been deserted and were already in ruins.¹⁸ One may well look in vain for evidence of Aryan war chariots devastating the land, for so far it has failed to materialize.

It has been argued that there is some evidence at sites such as Rana Ghundai III and Sohr Damb for attacks from the Baluchistan borderlands on existing settlements in the mid-second millennium B.C. New artifacts appear in this area suggestive of forms known to West Asia.¹⁹ The shaft-hole axe, for example, extends from Baluchistan to the Jhukar culture sites in lower Sind. Other artifacts include circular stamp seals of copper, a flat copper celt with lateral lugs, spiral-headed pins, and a cast-bronze macehead. Most of these are single items not located in a context of related artifacts or along specific routes, and they are therefore not of much value as evidence of invasions.

Quite distinct from this is the Cemetery H culture at Harappa,²⁰ which is alien to the earlier Harappan culture and yet in a limited way suggests some echoes of Harappan typology, the affinities extending both to the Bahawalpur region and to the Indo-Gangetic divide. The integration is suggested through the pottery, which combines some West Asian with some Harappan elements but is at the same time a distinctive pottery despite its restricted distribution.

Further north, in the Swat valley area, a large number of graves were excavated at Ghaligai, Timargarha, and other sites.²¹ The earliest graves date to the mid-second millennium B.C. and are differentiated from those of Period II by the presence of copper objects and various burial forms. Period III, dated to the early first millennium B.C., provides evidence of iron and the domestication of the horse, which has led to the view of its being a possible Aryan stratum. The ceramic industry consists of a red ware and a more extensive grey ware. The identification of the Gandhara Grave culture (as it is called) with the Aryan speakers would limit the area of their distribution to the Swat valley and its environs, which from the evidence of the R̥gveda forms only a small part of the vast Sapta Sindhu region known to its authors. The grey ware of this culture is also limited to this area and as yet has not

¹⁸ T. Burrow, "On *arma* and *armaka*," *Journal of Indian History*, 41.1 (1963), pp. 159ff.

¹⁹ B. Allchin and R. Allchin, pp. 144ff.; B. K. Thapar, "The Aryans: A Reappraisal of the Problem," in Lokesh Chandra, ed., *India's Contribution to World Thought and Culture* (Madras, 1970).

²⁰ H. D. Sankalia, *Prehistory and Protohistory of India and Pakistan* (Poona, 1974), pp. 392ff.

²¹ M. Antonini, "Preliminary Notes on the Excavation of the Necropolis Found in West Pakistan," *East and West*, 14.1-2 (1964), pp. 13-27; G. Stacul, "Excavation Near Ghaligai (1968) and Chronological Sequence of Protohistorical Cultures in the Swat Valley," *East and West*, 19 (1969), pp. 44-92; A. H. Dani, "Timargarha and the Gandhara Grave Culture," *Ancient Pakistan*, 3 (1967), pp. 1ff.

been found to be connected with other grey wares in the Indian subcontinent. The Swat valley sites do show some connection with the Gurgan valley sites in northeastern Iran at Tepe Hissar, Turang Tepe, and Shah Tepe, and with other sites in Iran.²² Hissar III provides evidence of the domestication of the horse and the use of the spoked wheel, and it yields a burnished grey ware; this in turn suggests links with the Zagros region, as for example at Hasanlu V. Red ware from Hasanlu V has striking parallels with that from the Swat valley. It is not beyond possibility that the Swat valley was at the eastern end of a large movement of peoples associated with the Indo-European speakers.

Another possible point of entry for migrants from West Asia could have been western India along a route following the coastal areas of Makran into the Indus delta and Gujarat. The Banas culture²³ of the second millennium B.C. in Rajasthan is characterized by copper technology and the use of a white-painted Black-and-red pottery, which as we have seen occurs earlier in Gujarat contemporary with the Mature Harappan phase. From Rajasthan this culture appears to have spread to the fringes of the Ganga-Yamuna Doab. The Banas culture occupies an area without Harappan connections, lies outside the Sapta Sindhu region, and shows hardly any trace of connections with West Asia.

The Black-and-red Ware culture²⁴ is in some ways the most significant of the post-Harappan cultures, although its genesis remains unknown. It fanned out into many directions from its nuclear zone in western India. Its characteristic pottery was produced as a result of inverted firing at progressively lower temperatures, resulting in the double color of black and red. By the first millennium B.C. it is also linked with the diffusion of iron into central India as well as with certain categories of megalithic burials, such as cairn burials, cairn circles, and cist burials, that are particularly associated with the peninsula. Whether the more complex Megalithic monuments of the peninsula with their Black-and-red pottery, iron artifacts, and widespread use of the horse are also to be traced to the more northerly Black-and-red Ware cultures remains uncertain. It has been suggested that in terms of correlating this culture with the evidence from literary sources, its distribution carries echoes of the migration of the Yadava lineage, a lineage that is claimed by both Aryan and Dravidian speakers in later periods.²⁵

²² R. H. Dyson, "Archaeological Evidence of the Second Millennium B. C. on the Persian Plateau," *Cambridge Ancient History*, II. 1, pp. 686-716; C. Young, "The Iranian Migration into the Zagros," *Iran*, 5 (1967), pp. 11-34.

²³ H. D. Sankalia et al., *Excavations at Ahar (Tambavati)* (Poona, 1969).

²⁴ N. R. Bannerjee, *Iron Age in India* (Delhi, 1965); B. K. Gururaja Rao, *The Megalithic Culture in South India* (Mysore, 1972); A. Sundara, *The Early Chamber Tombs of South India* (Delhi, 1975).

²⁵ R. Thapar, "Puranic Lineages and Archaeological Cultures," in R. Thapar, *Ancient Indian Social History*, pp. 240ff.

The Chalcolithic cultures of central India and the northern Deccan of the second millennium B.C. are too far removed from the geographical horizon of the *R̥gveda*, but one of the excavators of these sites maintains that the ceramic industry shows some links with forms from West Asia,²⁶ indicative perhaps of a folk movement from West Asia that brought people to western India and Rajasthan, whence artifactual traits may have traveled to central India and the northern Deccan.

The nucleus of the Sapta Sindhu region in the *R̥gveda*, where are located the more important tribes such as the Purus and the Bharatas, was the Sarasvati valley and the Indo-Gangetic divide, an area that was later to form the territory of the famous Kurus, in fact the heartland of Vedic culture. It registers an extremely complex topography because of the major changes in river courses and the drying up of the Sarasvati.²⁷ The resulting ecological change does little to clarify the archeological picture, which is further complicated by the many cultures that appear to have coexisted and overlapped in this area.

Late Harappan sites extend from the water shed into the upper Ganga-Yamuna Doab, where the Ochre Color Pottery culture,²⁸ also of the second millennium B.C., has been variously identified with Harappan refugees migrating eastwards or with incoming Aryans, neither of which identifications has been widely accepted. This culture is sometimes associated with the caches of copper implements found in the Doab,²⁹ but the association is tentative.

The most impressive and dominant culture of the region is the Painted Grey Ware variously dated to the late second millennium or the early first millennium B.C. and continuing at least to the middle of the first millennium.³⁰ An identification with the Aryans was first suggested on the basis of its occurrence at the lowest levels of sites mentioned in the *Mahābhārata*. Its distribution in the Sarasvati valley including the Bahawalpur area, the Indo-Gangetic divide, and the upper Doab would seem to coincide with the heartland of Vedic culture. Possibly there was an earlier phase when it was restricted to the Sarasvati valley and sites in the watershed that is reflected in the suggested overlap with the Late Harappan at some places,³¹ such as

²⁶ H. D. Sankalia, "New Light on the Indo-Iranian or Western Asiatic Relations Between 1700 B.C.-1200 B.C." *Artibus Asiae*, 26 (1963), pp. 315ff.

²⁷ H. Wilhemy, *Zeitschrift für Geomorphologie*, Sup. Band 8 (1969), pp. 76-91, argues for the change in the Sarasvati-Hakra and the diversion of water to the Yamuna during this period, the total ecological change having perhaps been due to tectonic disturbances.

²⁸ B. Allchin and R. Allchin, p. 200.

²⁹ B. B. Lal, "The Copper Hoard Culture of the Ganga Valley," *Antiquity*, 46 (1972), pp. 282-287; S. Piggott, *Prehistoric India*, (Harmondsworth, Eng., 1950), pp. 237ff.

³⁰ B. B. Lal, "Excavations at Hastinapura," *Ancient India*, 10-11 (1954-55); V. Tripathi, *The Painted Grey Ware* (Delhi, 1977).

³¹ J. P. Joshi, "Interlocking of Late Harappan Culture and Painted Grey Ware Cul-

Bhagwanpura, Dadheri, Katpalon, and Nagar. Its extension into the Ganges valley may date from the early first millennium B.C. This would also be the period when it could have been in contact with the Black-and-Red Ware in the vicinity of the western Ganges valley, as is evident from some sites that have Black-and-red Ware levels preceding the Painted Grey Ware or overlapping with it, as for example Jodhpura, Noh, and Atranjikhara. The material culture of the Painted Grey Ware in fact shows some affinities with textual descriptions from the Later Vedic literature. It was a society of pastoral cum agricultural people who were dependent on cattle for both dairy products and meat, who grew wheat and rice,³² who were familiar with the domestication of the horse and who in their later phase left evidence of the use of iron weaponry; the absence of burials at their sites suggests that cremation was their common practice. There is, however, still a problem in the identification of the Painted Grey Ware with the Aryans. There are no links between these settlements and those along the Indo-Iranian borderlands, or with cultures in West Asia. The gray ware of the Swat valley was unconnected with this pottery. The evolution of the Painted Grey Ware culture, and of its pottery that is distinctively different from all that went before, remains unexplained.

Thus efforts to identify the Aryans with a variety of archeological cultures remain inconclusive. There is no uniform distribution of a single culture that coincides with the entire area associated with the early Aryan speakers of the *R̥gveda*. There are instead a number of overlapping but differentiated cultures in this region. Those that come closest in characteristics and form to what is described in the texts appear to have little connection with western Asia, which would tend to contradict the linguistic evidence. The areas where there are seeming affinities in pottery and artifacts are beyond the geographical horizon of the early texts.

The attempt to identify the Aryans with archeological remains is perhaps a pointless exercise. Evidently the Aryans were not a distinct racial group with a recognizable assemblage of material culture carefully carried across mountain and desert in the process of migration. It would seem that the most tangible characteristic of their presence was their language. What was therefore being diffused was the language. This would not necessarily have required a chain of artifacts belonging to a uniform culture. Nor would language diffusion necessarily be registered in a uniform material culture. This is apparent from the spread of the Indo-Europeans in West Asia, a development that is recognized not by an identical ceramic or artifactual industry but by the introduction of Indo-European languages.

ture in the Light of Recent Excavations," *Man and Environment* (New Delhi, 1978), II, pp. 100-103.

³² K. A. Chaudhuri et al., *Ancient Agriculture and Forestry in Northern India* (Bombay, 1977), p. 58.

The pertinent question therefore is that of the mechanism of language diffusion. Conquest and the subsequent imposition of the language of the conquerors would be the simplest method and would bear archeological traces. But the evidence for conquest is limited, and if it exists, is largely confined to the Indo-Iranian borderlands. In the plains migration would perhaps be a more feasible proposition.

At a hypothetical level a possible reconstruction could be suggested. The earliest Aryan speakers, as pastoralists, could have moved across the Indo-Iranian borders, settling temporarily in the interstices of cities. If the movement across the borders was regular, they might have provided transportation for small items of trade, as is often the case with pastoral groups involved in either transhumance or seasonal migrations.³³ Possibly small settlements may have remained on the Indian side and maintained relations with the existing population in the second millennium B.C.³⁴ That the main period of settlement came after the decline of the Harappan cities would seem likely from the absence of descriptions of cities in the *R̥gveda*. The occasional references to the destruction of the "purās" could as well refer to the fortified settlements of the borderlands. The decline of the Harappan urban centers would have reduced the incentive to pastoral groups as carriers of trading items. This may have encouraged a more permanent type of settlement with seasonal camps turning to agriculture, and the settlements may well have extended to the "two grassy banks of the Sarasvati," as one of the hymns of the *R̥gveda* states.³⁵ Since Iran was coming under the influence of the Assyrian political system, bifurcation of the Iranian and Indian groups would be natural. Assyrian sources refer to Indo-European speakers in the Zagros area by the early first millennium B.C.³⁶ Were the Asuras, who were once friendly and then became the enemies, the worshippers of either Asura or of Ahura? Such settlements would initially make little impact on the existing culture apart from marginal changes with the introduction of new items brought from elsewhere. Their archeological identification would be equally difficult. (If the West Asian evidence is a fair parallel, then we can posit that nomadic pastoral groups tend to appropriate the material culture of the more settled agrarian communities. Evidence for the appearance of nomads in West Asia generally takes the form of the introduction of new names, the use of a different language, and the intrusion of new deities.³⁷

³³ A clear case of transhumance being tied into trade is that of the sheep and yak herders along the Himalayan borders who became the backbone of what has been called a "vertical economy"—in this case, between Tibet and India.

³⁴ M. Rowton, "Enclosed Nomadism," *JESHO*, 17 (1974), pp. 1–30.

³⁵ RV 7.96.2; 7.8.4; 7.18.3.

³⁶ Rene Labat, "Elam and Western Persia, c. 1200–1000 B.C.," in *Cambridge Ancient History*, II. 2, p. 506.

³⁷ A. Goetze, "The Struggle for the Domination of Syria (1400–1300 B.C.)," in *Cambridge Ancient History*, II. 2, pp. 1–8, 109–110.

Their survival would hinge on their maintenance of their own language and oral tradition. Linguistic purity can be maintained in an oral tradition up to a point, but the influence of the bilingualism necessary to a migratory pattern would also come to be reflected in certain linguistic changes. In the juxtaposition of Aryan speakers with descendents of earlier cultures, there could be either the conquest of the existing population, for which the archeological evidence is limited, or else the assertion of power by the Aryans over the settled population, through a mutual acculturation resulting in new cultural forms and the acceptance of the Aryan language. It is legitimate to ask how the language came to be accepted if there is such negligible evidence for invasion. One possibility may have been the gradual introduction of iron technology,³⁸ together with such innovations as the use of the horse, the spoked wheel, and the chariot, which may have acted as technological levers to give an edge to the culture of the Aryan speakers. The spread of the language would in any case have been a gradual process. This admixture of cultures and languages is perhaps what is reflected in the later Vedic texts and their possible archeological correlation with the Painted Grey Ware.

The *R̥gveda* would then represent the erstwhile migratory pastoralists now settled, still largely tribal, holding cattle as their main wealth, practicing religious rites with a component of shamanism, alienated from some indigenous groups but affiliated with others, and possibly appropriating into their tradition some of the past of the land they had come to. The first millennium B.C. saw a movement southwards and eastwards attributable to ecological changes in the watershed to interaction with existing cultures, and possibly to demographic and economic pressure that favored settling in new lands. The most fruitful interactions appear to have been at the meeting point of the Painted Grey Ware and the Black-and-red Ware cultures.

The form that Vedic culture took in the first millennium B.C., the period of the descriptions of rituals such as the Agnicayana, would seem to be an amalgam of existing cultures. Possibly the comprehension of ritual and symbol was blurred as much by the distance in generations from the earliest practice of these rituals as by the incorporation of originally alien systems. The ritual of the Agnicayana would then have to be seen as symbolizing this amalgam of cultures, going back to the shamanism of Indo-European days,

³⁸ Iron occurs at sites in central India and the Ganga-Yamuna Doab by the end of the second millennium B.C. At sites in the Gandhara Grave Culture and in Megalithic sites in Karnataka it occurs at the start of the first millennium B.C. By the eighth century B.C. it seems to have entered the production system. If it was one of the technological levers in the acceptance of Indo-Aryan, then it might have been introduced in the north by or through speakers of Indo-Aryan. Its use in the peninsula would then have had an independent entry, since most scholars tend to identify the Megalithic builders with Dravidian speakers (B.K. Gururaja Rao, pp. 330ff.). For a discussion on iron, see D. Chakraborty, "The Beginning of Iron in India," *Antiquity*, 50 (1976), pp. 114–124.

the sacrificial cult of Ṛgvedic practice, forms of possible Harappan survivals, and the accretion of more recent practices, perhaps taken from the Black-and-red Ware cultures. That there is an elaboration of some significance between the rituals as described in the Ṛgveda and the same rituals as described later in the other Vedic texts is apparent if a comparison is made of references to the Aśvamedha, for example. The Ṛgveda³⁹ describes a relatively simple ritual in which the horse is sacrificed for the acquisition of wealth, prosperity, and magical power. In the later texts it becomes an elaborate ritual incorporating the fire altar and consisting of many levels of activities spread over many months.⁴⁰ The ceremonies come to include fertility rites and the notion of a potlatch. The latter is as much a declaration of political ascendancy and social status as the sending forth of the horse, and this becomes even more evident in the descriptions of the Aśvamedha in the Mahābhārata⁴¹ and the Rāmāyaṇa.⁴² The yajña (sacrificial ritual) would represent the coming together of many rituals of diverse origins.

The search for the remnants of the Agnicayana ritual in archeological data is made more difficult by the fact that the structures associated with the ritual, sheds with thatched roofs supported by wooden posts, are made of perishable materials. The only exception is the altar, which was built of bricks. Was this done because the initial ritual was connected with migratory groups? Or because it did not require permanent sacred centers? Or was it done deliberately so that the area demarcated as sacred space could be desanctified at the termination of the ritual to leave only the altar? Equally striking is the fact that the objects used are primarily of clay and wood, so there is an absence of utility metals such as copper or iron. Yet copper, at least—and to a lesser extent iron—was familiar to first millennium people. The offerings of ghee, curd, milk, grain, Soma, and domesticated animals would have been available to pastoralists and agriculturalists.

That the building and worship of fire altars may have gone back to the Harappan period remains a hypothetical suggestion. Brick altars have not been found in association with Harappan sites, nor are they represented symbolically on the Harappan seals. It has been suggested, however, that fire altars may have been known to the Harappans, or more correctly to those living in the town of Kalibangan in northern Rajasthan.⁴³ A number of rectangular or tub-shaped earthenware structures were found inside the houses in the residential area as well as on a platform of the citadel area. In the latter case they were placed five in a row near a well, but a cut had been made through them at some later period by the construction of a brick-lined

³⁹ RV 1.162, 1.163

⁴⁰ KŚS 20.1; ĀŚS 10.6.1ff.

⁴¹ M 14.90

⁴² R 1.12, 1.13

⁴³ B. K. Thapar, "Kalibangan: A Harappan Metropolis Beyond the Indus Valley," *Expedition* (Winter 1975), pp. 19–32. cf. *Agni*, Volume I, page 154.

drain. The structures were approximately three to four feet in length and about half that in width. In the center of each was an upright stone cylinder with a series of terracotta cakes arranged around it. Traces of ash were visible on the inner side of the structure. These structures are clearly very different in concept and form from the Vedic "citi," even if it is assumed that they were fire altars. The resemblance would at best be symbolic, and even then rather farfetched. It is also curious that these structures should be found only at a single Harappan site. At most it can be argued that some rudimentary ritual connected with fire altars was known at this early period, and that this may have survived in altered garb when incorporated into the highly complex ritual connected with the Agnicayana.

Many decades ago a seminal idea was mooted by Caland in a comment on an excavation by Bloch of a mound at Lauriya Nandangarh,⁴⁴ a site better known for an Aśokan pillar located in the vicinity. The site contained three rows of five mounds between twenty and fifty feet high. They were cone-shaped but may originally have been hemispherical. The mound was built up of layers of yellow clay interspersed with layers consisting of straw, leaves, and burnt bricks made from the same clay. Since this was not local clay, it was specially brought, probably from the Gandak river, which is now at a distance of about ten miles from the site. The first mound revealed human bones, animal bones, burnt wood, and a gold plaque of a female figure. A large opening farther down and in the center appears to have held a wooden pillar; the stump of the pillar on excavation was found to be of sal wood and to have a girth of four feet four inches. The second mound contained animal bones. The third contained human bones, the jaw of a teen-aged child, and another golden plaque of a female figure.

Bloch thought these mounds to be the śmaśānas or burial places referred to in the Vedic texts, possibly royal burials, but Caland argued that śmaśānas are generally not round.⁴⁵ More pertinently, Caland questioned the placing of animal bones and the plaques of females in the human funeral mound. He suggested that these might instead have been Agnicayana altars, arguing that according to the texts they could have been of various shapes—hawk-shaped, square, round, and so on. They were to be built in five layers interspersed with sand. In the lowest layer was placed the golden form of a man symbolising Puruṣa or Prajāpati, who is sometimes depicted with milk-giving breasts.⁴⁶ (In the case of the Nandangarh plaques however, the female

⁴⁴ Th. Bloch, "Excavation at Lauriya," *Annual Report of the Archaeological Survey of India*: 1905 (1906), p. 11–15; W. Caland, *De Archaeologische vondsten in de heuvels van Lauriya* (Amsterdam, 1912). I am grateful to Professor Staal for drawing my attention to this discussion, and for translating Caland's paper for me.

⁴⁵ A point that incidentally seems to be contradicted in the ŚB 13.8.1.5, which refers to the devas making their burial places four-cornered, whereas the Asuras, Prācyas, and others make them round.

⁴⁶ ŚB 2.5.1.3; *Sacred Books of the East*, XII, p. 385.

genitalia are unmistakable.) In this layer were also to be placed the head of a man, a ram, a goat, a bull, and a horse; they could either be natural or made of clay. He was puzzled, however, by the wooden post in the center of the mound.

Kane has drawn attention to the statement that those who had performed the Agnicayana were permitted a structure of bricks or clods at burial, suggesting an association of ideas if not a clear link between the śmaśāna and the Agnicayana.⁴⁷ This in turn suggests a link between the terms *citi* and *caitya*.⁴⁸ *Caitya*, a form of *cetiya*, is ultimately derived from *citi*, the etymology of which refers to the act of "heaping up." A *citi* is a structure that results from a piling up of material in a particular form. Where the piling up was of bricks, the form would be more precise, and where it was of earth or clods of earth, the tumulus and the cairn would be "natural" in form. The *cetiya* would then be either a sacred enclosure marking a sacred spot or, when it contained the relics of those who had died, a sepulchral monument. Buddhist literature refers to it in both these senses.⁴⁹ Mus has suggested that the Vedic altar was the starting point of what developed into the Buddhist *cetiya* and *stūpa*.⁵⁰ Presumably the *yūpa* associated with the altar may have become the central pivot in the raising of a tumulus. A distinction is made between the śmaśāna, which is essentially a funerary marker, and the *caitya*, which is a sacred enclosure. In the latter capacity the site could presumably be of a sacrifice or ritual, or even of an object of worship that had been cordoned off, such as the *āsvattha* tree. The earliest reference to a *caitya* appears to be in the Āśvalāyana Gṛhyasūtra.⁵¹ The epics also indicate familiarity with the worship of *caityas* in various forms.⁵² In the Rāmāyaṇa *caityas* are mentioned more frequently in connection with the *rākṣasas*. Hanumān takes great pride in destroying the tall *caitya-prāsāda* in Laṅka and uprooting its massive pillar.⁵³ That this was not regarded as an act of desecration would suggest that *caityas* were perhaps linked with heterodoxy by this time.

Because of the etymological link between the words, it is assumed that the *cetiya* is a later form of the *citi*. It is possible, however, that the two, the Vedic altar and the tumulus, were parallel forms indicating places re-

⁴⁷ *History of Dharmaśāstra*, IV, pp. 246ff., n. 559; ŚB 13.8.1-4; KŚS 28.4.4. A. Parpola, *South Indian Megaliths* (Madras, 1973), pp. 30ff. Professor Staal informs me that there is a rather vague tradition among the Nambudiris that in the past some had the practice of the *yajamāna* or his wife (whoever died first) being cremated on his Agnicayana altar.

⁴⁸ V. R. Ramachandra Dikshitar, "Origins and Early History of the *Caityas*," *Indian Historical Quarterly*, 14(1938), pp. 440-451.

⁴⁹ *Majjhima Nikāya* I.20; *Jātaka* I.237; VI. 173; *Dhammapada* 188.

⁵⁰ *Barabudur* (Paris, 1935).

⁵¹ 1.12.1-4

⁵² M 1.102.12, 6.3.37. R 5.10.5.

⁵³ R 5.41.

quiring veneration, and that the difference in form related to differences in the cults and rituals followed by different social groups. The *stūpa* becomes a more elaborate form of the tumulus with a variety of symbolic embellishments. It is curious that in the listing of forms that the *citi* can take, mention is made of the *rathacakra* and the *saṃhūya* or *dhānyarāśi*,⁵⁴ which occur in *stūpa* construction respectively as the spoked-wheel foundation and the paddy-heap shape.

Such burial mounds are generally dated to the first millennium B.C. on the basis of archeological evidence and references in both Vedic and Buddhist literature. The worship of *caityas* and *stūpas* is regarded as customary even before the rise of Buddhism. Although *stūpa* architecture was made more elaborate in the Mauryan period⁵⁵ and later, the structure existed earlier, as shown for example in the record of Aśoka Maurya visiting and enlarging the Konakamana *stūpa*.⁵⁶

It is significant that there is no mention of the *citi* as an altar of bricks in the R̥gveda.⁵⁷ The development of the idea therefore may date to the period of the later texts, which represent the assimilation of Aryan and non-Aryan practices. In this connection a recent suggestion deserves some consideration.⁵⁸ It has been pointed out that the burial practices of the Asuras, Prācyas (easterners), and others described in the Śatapatha Brāhmaṇa bear a close resemblance to the Megalithic remains from the Jungal Mahal area, that is, to the Vindhyan outliers in the districts of Banda, Mirzapur, and Varanasi. The monuments are basically cairn circles and cist circles constructed of stone, and the dominant feature is the piling up of stones into a cairn. There is, however, no use of bricks anywhere, presumably because stone was easily available. The cairns enclose a pit that in most cases contains some human bones indicating postcremation burial and some animal bones associated with ritual killing, and there is one in which the bones of a tortoise and a rodent were found. The pottery is of various kinds ranging from an ill-fired red ware to the technically more sophisticated Black-and-red Ware. These monuments date to the first half of the first millennium B.C. Megalithic monuments serve the function in some cases of memorial monuments,⁵⁹ and in others of funerary monuments, a combination that appears to be reflected in the *caityas* of a later period. From both points of view these Megalithic monuments would be regarded as sacred enclosures.

⁵⁴ TS 5.4.11; KŚS 16.5.9. Also BŚS 17.29, below, pages 668-671.

⁵⁵ B. Rowland, *The Art and Architecture of India* (Harmondsworth, Eng., 1959), p. 254.

⁵⁶ J. Bloch, *Les Inscriptions d'Aśoka* (Paris, 1950), p. 158.

⁵⁷ The references appear to be to the piling up of wood, RV 1.112.17, 1.158.4.

⁵⁸ P. C. Pant, "Megaliths of Jungal Mahal and Vedic Tradition," paper read at Post-Conference Session at Deccan College, Poona, Dec. 1978. See also *Indian Archaeology—A Review* (1963-64), pp. 40-41.

⁵⁹ As for example among the Khasi tribes of Meghalaya and other parts of north-eastern India, where this tradition has continued up to recent times.

There may possibly have been some connections with these monuments in the fashioning of the forms and the symbolism of the Agnicayana.

By the first millennium B.C. there appears to have been a bifurcation in the rituals relating to death. The Harappans and most of the post-Harappan Chalcolithic cultures buried the dead with a predominance of urn burials or graves of various kinds. The Painted Grey Ware culture registers a noticeable absence of burials, suggesting that possibly cremation was the more regular form and was also legitimized in the Vedic texts. Given the social stratification that had emerged by this time, graves would almost certainly have been linked to persons or families of high status. However, the bifurcation is cultural and ethnic rather than social, since the Asuras and others are generally said to have had graves and burial mounds. The burial of the golden man, identified at some points with Prajāpati, who then passes to the invisible world of immortality to become the symbol of the immortal self and of the attainment of immortality by the yajamāna, indicates that burial rites may be woven into the Agnicayana. The fact of the altar being a fire altar obliquely introduces the notion of cremation. The extent to which the Agnicayana uses both burial and fire as symbols was perhaps a concession on the part of those who cremated the dead to the alien but older ritual of burial.

The Agnicayana altar, as it is most frequently described, was a large construction of brick requiring a substantial output in time and energy and a fair knowledge of geometry, since the bricks are of various shapes and sizes.⁶⁰ The unit is a square, one-fifth of the length of the sacrificer, and hence called the pañcami brick. Another tradition states that it should be one-fourth of the length of the yajamāna. Other shapes are variations on this, the basic measurement being subunits of one-half, one-fourth, and one-eighth. A large-sized brick, the adhyardha, is rectangular in shape with the longer side measuring one and one-half times that of the pañcama and the short side equal to that of the pañcama, which in turn is subdivided to accommodate the long and the short quarter. The sapāda brick is again rectangular, with the long side being one and one-quarter the length of the pañcama. Subdivision of the squares and the rectangles results in triangular bricks of various shapes, which are particularly handy in shaping the pointed contours of a hawk altar. The thickness of the brick is described as being one-fifth of the distance between the yajamāna's knees and the ground. This measurement is ambiguous, since the ratio of this distance to the full length of the yajamāna is not given.

Hyla Converse has drawn attention to the fact that brickmaking was a Harappan activity, and the details given for the making, shaping, and firing of these bricks may have derived from Harappan survivals.⁶¹ The ratios of

⁶⁰ The details regarding the bricks have been discussed in Volume I.

⁶¹ H. S. Converse, "The Agnicayana Rite: Indigenous Origin?" *History of Religion*, 14.2 (1974), pp. 81-95.

sizes of bricks from pre-Harappan and Harappan levels tends to be 1 : 2 : 3 and 1 : 2 : 4 in terms of thickness, breadth, and length. The size of the brick for the fire altar, i.e., 1 : 1 or 1 : 1.5, is also known from protohistoric sites, but it is not common. Since the ratio of the thickness of the brick to its breadth and length is of uncertain measurement, if the first ratio is deleted, then the size of the pre-Harappan brick would conform to 1 : 1.5, the size of the adhyardha. The sheer number of the bricks is also of some consideration. Most texts agree that the number should be 1000, with 200 bricks going into each of the five layers; but some texts mention the figure of 10,800.⁶² The size of the brick as defined by one-fifth of the length of the yajamāna would under any circumstances be large. Such an effort would require the labor of a settled population over some months and is unlikely to have been easily carried out by groups of nomadic pastoralists. This might in part explain why fire altars of packed earth are permitted in some texts, although the Yajurveda requires it to be built of brick.⁶³

Among the other objects that suggest some echo of Harappan affiliation are the discoid wheels of the carts. These consisted of the śakaṭa, the large cart for transporting the Soma, and the ratham, the small cart used for oblations. (The ratham used at Panjal had a small copper pipe fitted to it, but this could be a recent innovation.) The Harappans, it is thought, were unfamiliar with the spoked wheel, which is first mentioned in the R̥gveda.⁶⁴ Toy carts in terracotta from Harappan sites invariably have disc wheels. The recent cache of bronzes from Daimabad has one model of what appears to be an intermediate form between a cart and a chariot, and its wheels are also discoid.

Among the most obvious of the material objects that can be compared with archeological remains is the pottery used in the ritual. A distinction can be made between the pots as described in the literature and those actually used at Panjal. The pottery vessels required in the Agnicayana ceremony are the ukhā, in which the fire is deposited and maintained for many months;⁶⁵ the mahāvīra, which is used in the Pravargya rite associated with the Soma sacrifice; and a few other pots used in the ritual.⁶⁶

The making of these pots is described in detail in the texts. The clay has to be mixed with a large number of other things—varieties of earth, pieces of animal hair, plants, fragments of potsherds from deserted places (ar-mayāni kapālām), and powdered pebbles. In the case of the ukhā, the water

⁶² *Ibid.*, p. 83.

⁶³ *Ibid.*, p. 84.

⁶⁴ S. Piggott, p. 273ff.

⁶⁵ ŚB 6.5.4; BSS 10.1-8.

⁶⁶ ŚB 14.1.2; C. G. Kashikar, "Pottery in Vedic Literature," *Indian Journal of the History of Science*, 4. 1-2 (1969), pp. 15-26; W. Rau, "Vedic Texts on the Manufacture of Pottery," *Journal of the Oriental Institute (Baroda)*, 23.3 (1974), pp. 137-142; Y. Ikari, below, pages 168-177.

used for moistening the clay has to be boiled with the resin of the palāsa tree, and the ingredients mixed into the clay include iron rust. The technique suggested is that of coiling and dabbing to produce the actual shape of the pots. In one text this is to be done by a skilled potter, but in most other texts it is done by the yajamāna or his wife, or by members of the three dvija castes. The potter's wheel is in any case prohibited. The same clay mixture was to be used for making certain other pots, such as those used for milking, the vessel for ghee, and the dislike potsherds for keeping certain offerings. The pots were first to be sun-dried, then "plastered over" (perhaps the application of a slip). The mahāvira has to be smoothed by using gavedhuka grass. The pots are then well fumigated (*dhūpayati*) in horse dung before being fired (*pacati*) in a pit or open-hearth kiln, where they are to be placed in an inverted position.⁶⁷ In the description given for the firing of the ukhā, a four-cornered pit is dug in which fuel is laid. On it are placed some of the bricks and the ukhā, the latter in an inverted position. Above this comes another layer of fuel. The fuel is then kindled for the firing, which lasts the length of the day, and the fuel is replenished when required. If any of the pots crack in the process, they should be repaired, and if they break, then new ones are to be made to replace them. Preparations for the making of some of the bricks were to take place at the same time as the making of the pots.

The mahāvira should be one span high with a broad base and narrowed in the middle.⁶⁸ Another text describes it as being the shape of a wooden cup with either three or five elevations.⁶⁹ The top of the cup seems to have had a spout that would facilitate pouring. The ukhā should be one span high and a little more than a span in width, with a girdle around it and vertical strips.⁷⁰ The girdle is decorated with two to eight udders (breasts) with nipples. This would suggest an open-rimmed, oval pot. The pots used for milking are described as having the shape of the lip of the elephant, with a beak-like form for pouring that is like a ladle without a handle.⁷¹

The potter and the potter's wheel are known both from the literary and the archeological sources of this period. The insistence that the pots be handmade may have been an attempt to distinguish ritual pottery from that for daily use; this was doubtless to remove ritual pottery from the pollution of the potter and the potter's wheel, assuming of course that the potter's status was already low, and perhaps also to invest ritual pottery with an ancient tradition by debarring the use of the wheel. The injunction against the use of the potter's wheel is stated in one text with reference to the making of the milking pots.⁷² The fact that such specific directions are given for the making

⁶⁷ ŚB 6.5.4.4, 14.1.2.21; KŚS 16.4.11.

⁶⁸ ŚB 14.1.2.17; BŚS 9.4.

⁶⁹ BŚS 11.1-4.

⁷⁰ BŚS 10.1-8.

⁷¹ BŚS 11.1-4; Kashikar, p. 20.

⁷² MS 1.8.3.

of these pots may suggest that there might also have been a functional reason for using this technique.

The admixture of material to the clay would have produced a coarse-grained pottery more akin to early Neolithic handmade pottery than the finely levigated ceramics of the Chalcolithic period. The purpose of the mixture is explained in ritualistic terms, and various deities are invoked, which suggests shamanistic survivals. Technically, the use of what modern potters call "grog" as a filler, which produces a clay mixed with crushed potsherds and small particles of pebbles, results in a mixture that is difficult to throw on a wheel because of the meagerness of levigated clay; it is more likely to be successful if the pot is handmade. Wheel-thrown pots require well-levigated clay, the finer the better. The advantage of using grog is that such pottery is less likely to crack when it comes into direct contact with fire. Thus, for the purposes for which the ukhā was made, i.e., to be used as a fire pan, a mixture with the clay would be essential. That the same technique was extended to other pots used in the ritual would suggest that there was some attempt at archaizing the process.

The use of grog would also ensure less shrinkage at the green-hard stage when the pot is dried before firing.⁷³ The inclusion of hair, which would burn up in firing, served the same function. Iron rust may have acted as a fluxing agent to prevent the pot from collapsing when fired. Water boiled in resin may have assisted in providing an adhesive texture. The fumigation of pots before firing is a recognized technique in making primitive handmade black pottery; it fills in the pores with the soot particles that darkened the pot.⁷⁴ Such pottery is generally fired below sinter point, often because the use of a crude kiln does not permit a high enough temperature and results in a porous fabric. Grog was probably also necessary because the firing was done in a pit rather than a regularly built kiln, with no separator between the actual pot and the fire, unless the layer of bricks fired with the pots acted as a separator. In any case, an open-hearth kiln can only fire to low temperatures, and the clay would have to be porous to prevent cracking.

The archeological correlations of this pottery remain enigmatic. Neolithic potting techniques would go back to the fourth millennium B.C. in the Indo-Iranian borderlands and to the third millennium in the Deccan. But clearly the potter's wheel and more advanced techniques of kiln firing were also known; therefore the technique for making pots other than the ukhā seems to have been deliberately archaic. There are no clear parallels to the shapes described, merely some suggestive similarities. There is one pottery form, referred to as having been found at Dabar Kot in the Loralai area,

⁷³ For some of this information on potting techniques and the firing of pottery, I am grateful to a modern potter, Gori Khosla, with whom I discussed the details given in the texts.

⁷⁴ Henry Hodges, *Artifacts* (London, 1964), pp. 20ff.

that is described as a cup with a channel spout,⁷⁵ and the photograph does suggest a beaklike spout resembling the lip of an elephant! Similar pots have been noticed from sites in northeastern Iran, and the location of Dabar Kot would have placed it on the route connecting Iran with the central Indus plain. Pottery with udderlike elevations is rare in the ceramic assemblage of protohistoric India. A reference has been made to such a find at a site on the bank of the Tungabhadra at Itgi in Belgaum district, where a black oval pot was found with the required decoration and with the prescribed two holes in the base through which cord could be passed to enable the yajamāna to carry the pot.⁷⁶ However, the excavator dates this pot to the first century B.C. or A.D., a period much later than that of the texts.

The statement in the texts that the pots have to be placed in an inverted position for firing in the pit kiln has been interpreted as a possible reference to the inverted firing technique common to the widespread pottery of the Black-and-red Ware culture.⁷⁷ But if the intention was to produce a double color, then it is likely that the texts would have referred to this as a mark of distinction of the ritual pottery. Hyla Converse has argued that this was perhaps the secret technique that receives an ambiguous mention in the text. Reference to the color of the pottery is limited to one text that stipulates that the pots be fired to a red color.⁷⁸ To produce a black-and-red color would require controlled firing. Dry fuel and a good draft produce the oxidizing atmosphere necessary to make red pottery, whereas damp fuel and an obstructed draft are required to prevent oxidation and provide the reducing atmosphere necessary to make black pottery. A pit kiln such as the one described would have resulted in an indiscriminate mixture. The inversion of the pot may have had to do with ease of placing the pot in the pit. Pots are often placed in an inverted position in an open-hearth kiln, and the black and red tones that result can be accidental. The depth of the open-hearth kiln would also be significant. A deep pit would obstruct the flow of air. The reference in the texts to the bamboo handle of the spade disappearing in the pit would indicate a deep pit. In the description given for the making of the mahāvīra, there seems to be less admixture of grog, perhaps because unlike the ukhā this pot was not used for carrying fire. The mahāvīra is smoothed, perhaps to facilitate its handling. Curiously no reference is made to digging a pit when the pot is fired in an open-hearth kiln. This may be assumed, but it is worth noting that a shallow pit or a surface-level hearth would encourage a freer flow of air than a deep pit, thus permitting oxidation

⁷⁵ R. Mughal, "Explorations in Northern Baluchistan, 1972: New Evidence and Fresh Interpretations," *Proceedings of the Second Annual Symposium on Archaeological Research in Iran* (1973), p. 278.

⁷⁶ Kashikar, p. 26, n. 23; R. S. Panchmukhi, *Progress of Kannada Research in Bombay Province from 1941-46* (Dharwar, 1948), I-II; pp. 2.63-65.

⁷⁷ Converse; Kashikar; Rau.

⁷⁸ Kashikar, p. 20

and resulting in a red-colored pottery. One text states specifically that the fuel to be used, including dry herbs, wood, etc., should be such as would produce a red-colored pottery.⁷⁹

If the reference to inverted firing had to do with the Black-and-red Ware culture, then it poses another problem. A reference to nila-lohita in the Atharvaveda⁸⁰ is taken by some scholars to refer to the Black-and-red pottery. If this be so, then the text disapproves of the practices of those who use this pottery, giving it an Asura connection. But this connection is also hinted at in the statement that the ukhā is born of the asuri māyā.⁸¹ The Ṛgveda links Asuras with the Aṅgirasas, who are believed to be the priests of the fire cult.⁸²

To add further complications, the texts also speak of the "smoothing" of the pots. It has been assumed that the outer surface of the pottery was black, and that therefore the reference to the polishing of this pottery may hint at a relationship with the Northern Black Polished Ware of the mid-first millennium B.C.⁸³ The latter is late on the ceramic scene, has its provenance in the middle Ganges valley, and was made possible through development of a highly evolved technique of firing at temperatures, that, it has been suggested, were probably attainable only after the invention of iron smelting. The nomenclature is deceptive, since the polish is not due to any post-firing technique but probably results accidentally through the interaction of natural constituents of the clay, or the addition of some special ingredient. It is generally associated with the luxury ware of the urban centres in the pre-Mauryan and Mauryan periods. In fact, the method for polishing pots described in the texts could more correctly be interpreted as a form of burnishing, a method used for the smoothing of the exterior surface of handmade pottery and already a common practice in the making of Neolithic pottery. This is further supported by the fact that the burnishing of pottery is usually done at the green-hard stage prior to firing, and polishing is a post-firing technique. The texts are clear that the "smoothing" is to be done prior to firing. The purpose of burnishing was literally to smooth the exterior surface, but it was also employed to make the pot less porous or to add a decorative feature.

As regards the pottery actually used in the ritual at Panjal, there are some similarities, admittedly very vague, with forms current in the proto-historic period. The ukhā, if visualized without the udders, suggests a pedestaled dish, the earliest examples of which go back to the Harappan period, and the form of which, with some variation, has a continuity into the Megalithic and central Indian Chalcolithic cultures of the peninsula. However,

⁷⁹ ĀSS 15.3.20, quoted in Eggeling, *Sacred Books of the East*, XLIV, p. 456, n. 3.

⁸⁰ 4.17.4, 5.31.1.

⁸¹ ŚB 6.6.2.6; VS 11.69; TS 4.1.9. See Volume I, pages 136-138.

⁸² RV 3.53.7, 10.67.2. Cf. Volume I, pages 138, 162.

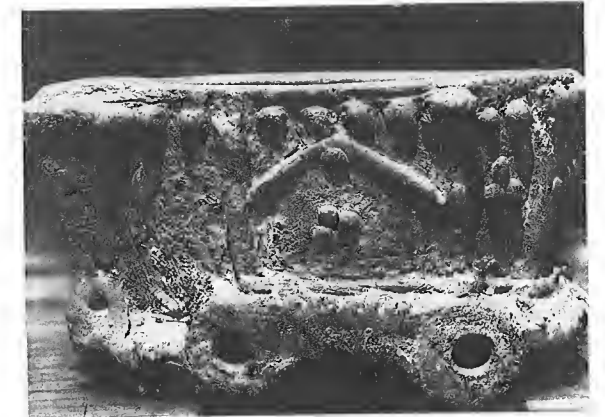
⁸³ Kashikar.

PLATES 1A-D

Vessel Excavated at the Site of Itgi and Identified as an Ukhā



A



B



C



D

the stand in this case would seem not to match the textual description, which makes it sound like a cauldron. The mahāvīra, inasmuch as its shape resembles the bowl-on-stand, would carry traces of some forms from the Gandhara Grave Culture and from post-Harappan pottery, particularly of the central Indian Chalcolithic. The latter cultures also provide evidence of vessels with a tubular spout. However, none of these resemblances are in any way close. The most that can be said is that the pottery used in the ritual at Panjal, if it has any archeological analogies at all, would seem to come nearest to shapes found more often in the post-Harappan Chalcolithic cultures. Its immediate ancestry in terms of form, texture, and technique is suggestive of a later period, possibly the early first millennium A.D. This is not surprising considering that what is under investigation is a living tradition that would doubtless be influenced by late forms and techniques.

In the ceremonial space used for the performance of the Agnicayana, there is only one structure that is likely to survive, namely the altar. Consequently, the presence of an altar is the only major clue to the site of an actual performance of the ritual. Claims to have identified such sites from archeological remains are extremely few, and of these only one is accepted as genuine, since it carries an inscription describing it as an altar. This extreme paucity of evidence may have to do with the fact that such altars are required to be constructed on ground that has been sanctified and demarcated, and that therefore inevitably has to be at some small distance from settlements. Archeological excavation is primarily of settlements, and it is largely by chance that such an altar may be found in the process of exploration.

PLATES 2-4 Controversy still swirls around the identification of a śyenaciti on the outskirts of the ancient city of Kauśāmbi dating to the mid-first millennium B.C.⁸⁴ The śyenaciti is located on the outside of the eastern gate, but close to the defence wall of the city, and it is bounded by the revetment of the rampart and its returning wall. The altar, in the shape of a bird (eagle?) with outstretched wings, faces southeast. It has a length of 49 feet 8 inches and a width of 33 feet 6 inches. In the construction of the altar the first layer of bricks was sealed by a sand deposit of 6 inches. In its center was a gravel (kankara) nodule—with small cavities enclosed by a circle of 10 bricks—that the excavator takes to be the svayamātrṇṇā. The most noticeable pottery object was shaped like an offering stand with a broken top approximately 5 inches high. In the same layer was included a terracotta female figurine, stylistically datable to about the second or first century B.C. The excavator also describes a brick with an engraving of a man tied to a stake who is about to be beheaded. There is a scatter of animal bones—a horse skull, tortoise shell, the jawbone of a pig, and the bones of elephants, bovines, and goats, the last three having been verified as such. Also included in this layer was an iron

⁸⁴ G. R. Sharma, *The Excavation at Kausambi* (1957-59) (Allahabad, 1960), pp. 87ff.

model of a snake. Layer II seals off the jawbone of a buffalo and bricks of various shapes. Layer III produced three complete human skulls and some skull fragments, and also hipbones, ribs, and long bones. Some bones bearing incision marks were arranged in a V-shape or were enclosed in brick structures suggesting careful placement and some ritual function. Layers IV and V were badly damaged by a pit from a later period that had been dug into these layers, but they nevertheless provided evidence of human bone fragments. There were also a human skull and some pots placed in the tail section of the altar.

The identification of the site as a fire altar does raise some problems. The location of the altar so close to the ramparts of the city seems unusual. Given the fact that the altar is part of a ritual that requires the demarcation of sacred space, it seems strange that it should not have been placed farther from the city wall. The excavator quotes a reference in the *Kandahāla Jātaka* to a king digging a sacrificial pit just outside the eastern gate of the city.⁸⁵ It could be argued that the site was away from the original wall of the city but that the later extension of defences and the building of revetments resulted in encroachment on the altar space. This would depend on the date of the altar. If the terracotta figurine is not a stray from a later period, then the altar may well date to a period subsequent to the reinforcing of the city walls. The shape of the bird as presently reconstructed appears to be rather curvilinear, whereas the bricks used for the altar would indicate a more rectilinear form. The interpretation of the objects found is also not convincing.⁸⁶ The engraving on the brick of a man tied to a stake would seem to appear to be such only in the eyes of the excavator, if one can judge by the photograph; nor is the iron model of the snake recognizable. The pottery object described as an offering stand bears greater resemblance to a wide-mouthed jar. The frequency of human skulls and bones would also seem to suggest a ritual different from that described in the texts and it certainly is in excess of what is required. The texts refer to the burial of the head of a man, ram, goat, bull, and horse. The skulls of all but the human are absent in this śyenaciti, although their bones are there.

Whether or not the śyenaciti is in strict conformity with the descriptions of the fire altar in the literary sources, and whether or not the interpretation of objects as given by the excavator is acceptable, there can be little doubt that the structure did represent some kind of sacrificial or funerary site. The brick structure was built to some specification. The large number of human bones and the associated animal bones would point to a ritual connection. If the site is as late as the first century B.C., then it is possible that some pragmatic changes were introduced into the rituals described in the texts. The site was evidently disturbed in later periods, and this may have been

⁸⁵ *Kandahāla Jātaka*, No. 542.

⁸⁶ G. R. Sharma, Plate 31B, Fig. 18.4 facing p. 89; Plate 32A, Fig. 18.1 facing p. 89.

PLATE 2

The Mound at Kauśāmbi Showing the Defense Structures



PLATE 3A
Part of the "Šyenaciti"

PLATE 3B
Section Across the "Šyenaciti"



A



B

PLATE 4A

The "Śyenaciti"

The head is in the foreground and the vertical scale demarcates the body from the wing.

PLATE 4B

The "Śyenaciti"

Horizontal scales indicate the location of the svayamātrṇṇā and the tortoise shell.



A



B

accidental, although the possibility that such sites were believed to contain treasure may account for many tumuli having been broken into.

PLATE 5A-B

Another place with far less evidence was also rumored to have provided an altar site. This was the town of Nagarjunakonda in the Paland taluka of Guntoor District. The inscriptions of the Ikṣvāku kings who ruled here in the second and third centuries A.D. refer to the performance of yajñas such as the Aśvamedha, and this encouraged the search for the sites of the rituals.⁸⁷ Two tanklike structures, one a square stepped tank and the other in the shape of a kurma or tortoise, were interpreted as altars. Recent opinion has rejected such interpretations.⁸⁸ The structures are pits in the ground and not platforms. They are part of the palace complex and appear to have been ornamental tanks. The system of underground drains, wells, and cisterns would support this idea. Had there been any fire altars in the vicinity of the city, it is most likely that they would have been discovered, since the original location of Nagarjunakonda at a lower elevation in the valley was carefully and systematically explored, the excavation being part of a project of "salvage archeology" carried out before the site was submerged on completion of the Tungabhadra dam.

By the early centuries A.D. the Vedic sacrificial rituals, inasmuch as they were performed by monarchs, appear to have acquired another dimension. They became a legitimizing ritual for kings, particularly for those seeking connections with the two royal lineages of kṣatriya ancestry, the Sūryavaṃśa and the Candravaṃśa. This may also in part explain the bifurcation of royal patronage to religious sects, where the women of the royal families—as, for example, the Ikṣvākus—were equally zealous in their support of Buddhism, which support is amply reflected in the monuments and inscriptions of the time.

PLATE 6

The one site that can be described without hesitation as that of a fire altar is at Jagatgram.⁸⁹ It was discovered in the course of exploration in the Dehra Dun district where the Yamuna River descends from the Siwalik hills to the plains. It lies in the vicinity of Kalsi, better known as the site of a series of rock edicts of the Mauryan emperor Aśoka. Three sites were exposed where a king had performed Aśvamedhas. Each site consisted of an eagle-shaped altar. Inscribed bricks from the first site provide the information that a king, Śilavarman, performed four Aśvamedhas at Jagatgram. One inscription reads:

*siddham aum yugeśvarasyāśvamedhe yugaśailamahipate iṣṭakā
vārṣaganasya nṛpateśilavarmaṇa*

⁸⁷ T. N. Ramachandran, *Nagarjunakonda* (Calcutta, 1938). M.A.S.I. No. 71.

⁸⁸ H. Sarkar and B. N. Misra, *Nagarjunakonda* (New Delhi, 1972), p. 20.

⁸⁹ *Indian Archaeology—A Review* (1935–54), pp. 10–11; T. N. Ramachandran, "Asvamedha Site near Kalsi," *Journal of Oriental Research*, 21 (1953), pp. 1–31.

"Hail! Brick from the altar of the Aśvamedha of the king Śilavarmana of the Varṣagana, the lord of Yugaśaila, the Yugeśvara."

Another brick inscription reads:

nṛpatervarṣaganasya poṇaśaṣṭhasya dhimata caturatthasyāśvamedhasya citoyam śilavarmaṇa

"Altars of the four Aśvamedhas of the renowned king Śilavarmaṇa of the Varṣagana, sixth in descent from Poṇa."

It has been suggested that the Varṣagana-gotra may be the same as that referred to by Pāṇini as the sixty-ninth gotra, Vṛṣagana,⁹⁰ and the word *yugeśvara* suggests "the lord of the lustrum" described in the Bṛhatsamhitā. The latter might indicate that the repeated performance of the ceremony had to do with the purification of the king or the people. The identity of Śilavarman remains obscure, as does also his line of descent from Poṇa. He may have been associated with the rulers of Lakha-maṇḍala in this area. Paleographically the inscription written in Brāhmi dates to the third century A.D. The bricks bearing the inscription are of two sizes, 1 : 2 : 3 and 1 : 2 : 4. The area obviously had settlements during the Mauryan period for there to have been a set of edicts inscribed nearby. Excavations in the neighborhood indicate more evolved settlements dating to the start of the Christian era.⁹¹

The Agnicayana altar as a structure is proceeded with layer by layer, and in a sense the same pattern of construction may have gone into the ultimate form of the ritual. Archeologically there is no clearly defined culture or period to which it can be related. The pottery-making techniques suggest Neolithic practices, the forms of the pottery carry traces of Chacolithic types, the bricks are strongly reminiscent of a Harappan urban culture, the hawk shape of the altar echoes shamanistic ideas, and the inclusion of both human and animal bones suggests analogies with Megalithic funerary monuments. The increasing emphasis on a form of potlatch included within the rites points to a people probably no longer nomadic and with enough wealth to be distributed and consumed on a ritual occasion. The Agnicayana ritual was gradually put together, modified, adjusted, and elaborated upon in the course of centuries. Not only was it extended by additional rites, taken perhaps from a variety of cultures, but the additions were interlocked in a vast edifice of ritual. In this process its purpose and function also underwent

⁹⁰ Pāṇini 4.1.105.

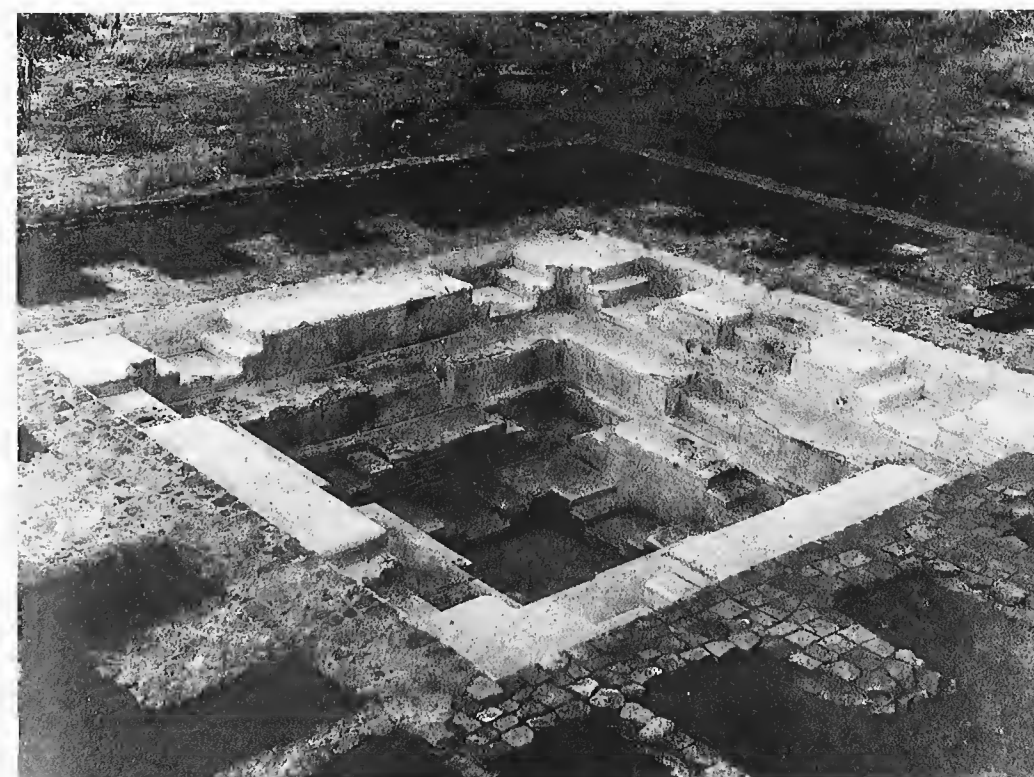
⁹¹ N. C. Ghosh and R. P. Sharma, "The Cultures of the Early Historical Period in the Siwalik Ranges Between Ganga and Yamuna," paper presented at the Archaeological Society Conference, Chandigarh, 1975.

PLATE 5A-B

The Tortoise-Shaped and Square Tanks at Nagarjunakonda

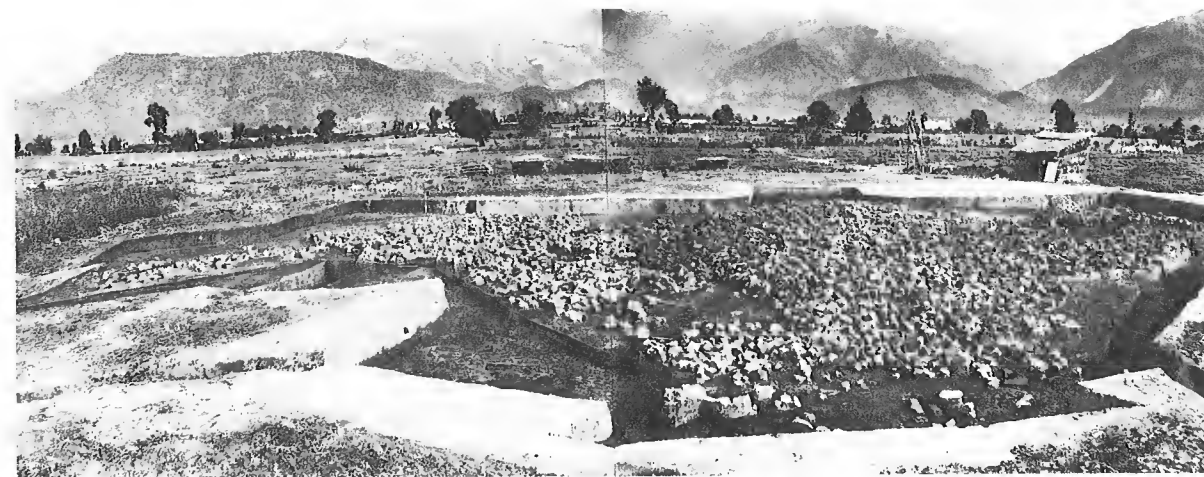


A



B

PLATE 6
Altar Excavated at Jagatgram



change. Beginning as a ritual performed for the acquisition of magical power linked to the concept of an immortal self and for the expression of communion between men and gods, it incorporated in its development notions of fertility, wealth, and power, and emerged as a ritual of legitimization and social validation. Its very survival into the present takes on yet another dimension, the historical dimension, that is far different from those with which it started.

ABBREVIATIONS

AŚS	Āśvalāyana Śrautasūtra
BhŚS	Bharadvāja Śrautasūtra
BŚS	Baudhāyana Śrautasūtra
KŚS	Kātyāyana Śrautasūtra
M	Mahābhārata
MS	Maitrāyaṇī Saṃhitā
R	Rāmāyaṇa
RV	Ṛgveda
ŚB	Satapatha Brāhmaṇa
TS	Taittirīya Saṃhitā
VS	Vājasaneyi Saṃhitā

THE PRE-VEDIC INDIAN BACKGROUND OF THE ŚRAUTA RITUALS

Asko Parpola

THE SCOPE

THE PRESENT PAPER has grown out of many years of study of the śrauta ritual on the one hand, and of the script, language, and religion of the pre-Aryan Indus civilization on the other.* The pre-Vedic Indian background of the śrauta ritual is a topic that has so far attracted little concentrated attention, but since it has been constantly in my thoughts over the years, a considerable amount of material has accumulated. While attempting to digest and present my findings in the present context, I have been painfully aware of the complexity and extent of the problems and material involved. I have tried to restrict myself to central issues and to put them concisely, yet the first draft came to more than two hundred typed pages before all that I wished to say was in writing. The limited space at my disposal here, therefore, allows only a condensation, which undoubtedly represents a gain in clarity, since I have been forced to concentrate on outlining the framework of the historical development as I see it emerging. The exposition is interspersed with details and examples that are of major significance as illustrations of the evidence upon which the reconstruction is based.

The first part of this paper deals with the various grounds for my basic hypothesis, namely, that the "classical" Vedic religion of the Brāhmaṇa and Sūtra texts is a syncretistic one, the product of a religious acculturation in which two distinct traditions have been fused. One of these traditions is that brought to India from the outside, probably around 1200 B.C., by the invading Aryans who also introduced the poetry that the Ṛgvedic hymns perpetuate. The other tradition is that of the Dāsas, the people who occupied the so-called Vedic areas before the arrival of the Aryans in India. At the same time I argue that the Dāsas, too, were speakers of an Aryan language, though one dialectally different from that of the Ṛgveda.

The second part of the paper is concerned with the identification of Dāsa elements and their outstanding characteristics in the syncretistic Vedic ritual, and with the interpretation of the emerging pattern. Some of the most important insights that result from this study are also briefly indicated; the chief feasts of the Dāsa ritual appear to have been half-yearly seasonal

* This research has been financed by the Academy of Finland.

rites; they are essentially "Tantric" in character, and are intimately connected with the mythology of Prajāpati and Rudra, which includes the Śunaḥśepa legend.

Since according to archeological evidence the Dāsa religion prevailed outside the Vedic area as well, its reconstruction, as based on the Veda, must be checked with the help of non-Vedic sources. In the third part I review some of the chief materials and problems that are to be more fully examined from this point of view.

The Dāsa religion, which forms the immediate pre-Vedic Indian background of the śrauta ritual, also appears to consist of two distinct traditions that have merged into one syncretistic whole. The participants in this earlier fusion, it is claimed, were on the one hand the Indo-Aryan speakers who called themselves Dāsas and came to India shortly after 2000 B.C., and on the other hand the people of the Harappan-related cultures, who spoke Dravidian languages. I also will indicate methods of proving the latter thesis. To illustrate one of these concretely, the last section of the paper presents in abbreviated form a suggested Dravidian solution to one of the many riddles of the Vedic ritual, that posed by the term *kinpuruṣa*.

THE ARCHEOLOGICAL AND LINGUISTIC FRAMEWORK

In an earlier paper (Parpola 1974), I have argued that it is possible, justifiable, and useful to integrate the archeological and linguistic evidence available for the reconstruction of Indian protohistory. I also suggested an overall correlation of this kind: only such a full-scale comparison can provide sufficient internal control.

A good starting point is the widely supported equation of the PGW (Painted Grey Ware) (ca. 11th to 5th century B.C. in the Panjab, North Rajasthan, and the Ganges-Yamuna Doab) with Vedic culture. These two, practically speaking, have identical spatial, temporal, and cultural horizons (e.g., B. and R. Allchin 1968, 208-212).

Between 2000 and 500 B.C. North India was gradually occupied by cultures characterized by the BRW (Black-and-Red Ware), which in the first millennium B.C. spread to South India as well, being attested there until A.D. 200. At Atranji-khera, the BRW has been found stratified under the PGW (Agrawal 1968, 61f.). After the intrusion of the PGW into the middle of the northern plains, the BRW continued its existence together with and surrounding the PGW until about 500 B.C. Around this time both were overlaid by the Northern Black Polished Ware, whose spread is probably related to the emergence of the historical Magadha (B. and R. Allchin 1968, 208-219).

The BRW people can hardly be identified with Dravidian speakers simply

because they "once inhabited the *whole* of India" as the Dravidians had done (Zvelebil 1965, 65), or because the interaction between the PGW and BRW peoples in 500-300 B.C. coincides with the massive influx of Dravidian words into Sanskrit (Converse 1974, 82). The earlier Harappan-related cultures, which, if we include the Deccan neolithic with some northwestern influences (Fairservis 1975, 328f.), also cover the whole of India, form in my opinion the only complex that can be equated with the early Dravidian speakers (Parpola 1975, 190f.). The said Dravidian loanwords have apparently been adopted into Sanskrit through the eastern Indo-Aryan dialects, which have been subject to a Dravidian substratum influence until historical times. A Dravidian identification of the BRW cultures would leave no room for such other non-Vedic Indo-Aryan languages as are known to have been spoken to the east of the Vedic area in the Brāhmaṇa period (ŚB 3.2.1.18 f.; Thieme 1938, 3f.).

Emeneau (1966) has made it quite plain that even in Ṛgvedic times there existed in India several Old Indo-Aryan dialects. The one from which classical Sanskrit descended not only differed essentially from the Ṛgvedic dialect but also had in some respects a more archaic character. This evidence, replacing the theory of Hoernle and Grierson about "inner" and "outer" bands of Neo-Indo-Aryan languages, supports the suggestion made by Wheeler (1959, 28), Agrawal (1966), and the Allchins (1968, 324), that the BRW and the PGW represent a first and a second wave of Indo-Aryan immigrants. The early Banasian white-painted BRW (Ahar and Gilund I, ca. 1800 B.C. onwards), related to the BRW of Atranji-khera (Agrawal 1968, 61f.), is traced back (Fairservis 1975, 338f.) to the North Iranian Black or Grey Ware Culture. On the other hand, this latter culture diffused from the Gorgan plain (type site Tepe Hissar II A-B through III A-B-C, ca. 3000-1900 B.C.) over Tepe Giyan III westwards to the Mitanni area, where a luxurious fine white-painted black ware is attested during the rule of the "proto-Indo-Aryan" dynasty, but not before or after it. On the other hand, it spread eastwards to Turkmenistan (type site Namazga Tepe IV-VI, ca. 2000-1500 B.C.), to Balkh in North Afghanistan (C¹⁴ dates 1500-1250 B.C.), and to Swat (Ghaligai IV) as well as to Sind (the Jhukar culture in Amri and Chanhu-daro, with no break after the Harappan culture in the early second millennium B.C.) (Ghirshman 1977, 3-44; for Jhukar, see *ibid.*, p. 72; Pigott 1952, 220ff.; and Fairservis 1975, 302; for Swat, see Stacul 1969, 83f.). Ghirshman, who has been the first to understand the significance of the golden and silver trumpets of Tepe Hissar (IIIC) used in commanding the movements of horses during battles, has, it seems to me, succeeded in definitely proving the Aryan identity of this cultural complex, which domesticated the strong Turkmenian horse and yoked it to a war chariot with two archaic disc wheels, as shown in a cylinder seal of Tepe Hissar IIIB (Ghirshman 1977).

The origins of the PGW and the Ṛgvedic Aryans can be sought, it ap-

pears to me, in the second wave of Aryan invasions from the Eurasian steppes to Iran and India. It is first attested at Sialk V with Necropole A (ca. 1250–1000 B.C.), while Sialk VI, with Necropole B (ca. 1000–800 B.C.) represents a later phase. The wave has been traced in Northern Iran (first in Madau I and other sites in the Kopet Dagħ region), Margiana (Yaz I), Bactria (Tillia Tepe), Arachosia (Mundigak V), and Baluchistan (Pirak I) (Ghirshman 1977, 45ff.), as well as in Swat (Ghaligai V–VI), where it is represented by a fine grey ware (Stacul 1969, 84f.). The R̥gvedic poetry and religion, up to the near verbal identity of numerous phrases (Schlerath 1968, II, xi, 148–164), is very much more closely related to the Avesta than to the Atharvaveda and the Brāhmaṇas. Although Ghirshman has interpreted the second wave in exclusively Iranian terms, it seems more legitimate to connect the R̥gvedic people with this archeological evidence (i.e., Ghaligai V) than with the Hissar II–III complex, which is separated from the Iranian branch by an interval of some two millennia. References to iron are hard to find in the R̥gveda (Rau 1974), which suggests that it represents the first iron phase when this metal was still very scarce (Sialk A), but iron is already known to the Atharvaveda (11.3.7; Rau 1974, 21) and the PGW culture, the first iron-using culture of North India. Iron can only have been brought to India by people of this second wave, who are known to have passed through the Swat valley.

THE IDENTITY OF THE DĀSAS AND THE VEDIC ACCULTURATION

The R̥gvedic hymns refer to battles with people called Dāsas and Dasyus, who are clearly distinguished from the R̥gvedic Aryans themselves (Zimmer 1879, 101, 104–118); they are “non-Aryan” (*an-ārya*), have a dark skin color, do not worship Indra (*an-indra*) or perform the Soma sacrifice (*a-yajña*), and either do not speak (*vi-vāc*, *an-āśya*) or use inimical speech (*mṛdhra-vāc*), which probably refers to ritual silence and curses, respectively; their black magic (*yātu*) is much feared. In two hymns (RV 7.21.5; 10.99.3); Indra is invoked against, or as the slayer of, “those who have the phallus as their god,” or alternatively “tailed deities” (*śiśnā-devāḥ*; Wackernagel 1905, II, 1, 275), which can be reasonably taken to refer to these same enemies.

The name *Dāsa* is in later language an appellative meaning “slave”: this use may be derived from the self-appellation of the war captives (cf. Volga-Finnic *orja* ‘slave’ from Iranian **ārja* ‘Aryan’ in Joki 1973, 297). Like the presumably related word *dasyu*, it is of Indo-Iranian etymology, having in some Iranian languages cognates meaning “man” (this meaning is very common in ethnic self-appellations everywhere), and being besides attested as the name of the Iranian tribe *Daha* (with whom Hille-

brandt [1891, I, 95ff.] equated the Dāsas; see Bailey 1958). Thus it supports the above identification of the BRW people as speakers of an Aryan language.

Since the Mitanni Aryans worshiped Indra, the epithet *an-indra* for the Dāsas, who supposedly belonged to the same first wave, is somewhat problematic; however, it must be borne in mind that in early Buddhist sources this deity is known but is exclusively called *Sakka*, which is an ancient epithet of Indra (Sanskrit *śakra*). The dark skin color of the Dāsas can hardly (with, e.g., Horsch 1966, 478) be considered as an insurmountable hindrance to the identification of the Dāsas as Aryan speakers: it is only what one reasonably would expect from the racial assimilation that accompanied the cultural fusion with the earlier Harappan-related inhabitants of North India after the beginning of the second millennium B.C.

A similar assimilation has also taken place between the R̥gvedic Aryans and the Dāsas within the area that the former came to occupy (Rau 1957, 18f.; Walker 1968, II, 74ff.). It is possible to follow this amalgamation in the formation of the Vedic texts. The great bulk of the R̥gvedic hymns, especially the old “family” books, are faithful to the Indo-Iranian heritage: the god of thunder and war (Indra), his arch enemy (Vṛtra), and the sacrifice of Soma providing the god with his invigorating drink, are in the foreground as they are in the Iranian sources (e.g. Renou and Benveniste 1934; Gonda 1960, I, 53 ff.). With Books I and X, which can be distinguished from the rest as considerably later (Wackernagel and Renou 1957, 1ff.), a radical change sets in; here and in the closely related Atharvaveda-Saṃhitā (AV), quite different subjects suddenly emerge: cosmogonic speculation and riddles, the ideology of the cosmic man (*puruṣa*) and his (self-)sacrifice, ecstatic practices, dialogues, legends, and “house” rituals (funeral, marriage, and, especially in the AV, white and black magic, *bheṣajam* and *yātu/abhi-cāra*).

The differences from the old RV increase with the passage from the Saṃhitā to the Brāhmaṇa texts. The earliest Yajurvedic texts already describe most of the śrauta sacrifices in all their complexity. Many of these rites, including such important ones as the Agnicayana, clearly have no original connection with the Soma sacrifice with which they are combined, and are altogether unknown to the old RV. Even the pantheon undergoes a radical metamorphosis. Indra loses much of his supremacy and becomes a phallic fertility god (cf. Rau 1966), exactly what his early worshippers loathed. New divinities, not traceable to Indo-Iranian origins, emerge in the late RV and quickly become the most important gods of Brahmanism. Such are, above all, the two chief gods of the Agnicayana: the cosmic man (*puruṣa*), who is the creator god Prajāpati, and Rudra, who appears in a subordinate position in the old RV but soon gains in importance, becoming the Śiva/Skanda of classical Hinduism (Gonda 1970, 2ff.). An important cultural

feature may also be mentioned: the calendrical asterisms, unknown to the Avesta and the old RV, are referred to in the late RV and fully listed in the AV (Scherer 1953, 149ff.).

So far it has been generally supposed either that all these striking deviations from the old traditions existed from the start in the women's circles or the lower ranks of Vedic society but were purposely kept out of the hieratic old hymns of the priestly elite (thus Gonda 1954, 8); or that they developed in the course of the all too short time that separates the RV and the Brāhmaṇa period (thus Renou 1957, 9). The reason an external influence has usually been left out of account is that many of these elements have features unmistakably of ancient Indo-European origin, and the Dāsas have been thought to be non-Aryans (e.g., Keith 1925, I, 234; and even Horsch 1966, 478). The importance accorded to the new elements from the beginning presupposes, however, a longer foregoing development, and at least the new śrauta rites and astronomy must needs have been in the care of the priests.

The dilemma is solved by my proposed model of acculturation between two separate waves of Aryan invaders. In itself such a hypothesis is not new. Reference has already been made to the "outer" and "inner" bands of Indo-Aryan languages alleged by Hoernle to represent such waves. But I want especially to mention here the important work on the Vedic ritual by Rönnow, whose basic assumption was that the worshippers of the asuras (especially Varuṇa) represented an earlier, pre-Vedic wave of Aryans (cf. Rönnow 1927, 8ff.; 1929, 113). This hypothesis is in my opinion quite warranted. In ŚB (3.2.1.18ff.) the Mlecchas who worship asuras and speak a Māgadhi-like Prakrit are clearly the enemies of Vedic Aryans residing in eastern India. The word *asura* did not originally have the younger Vedic meaning "demon" (i.e., god of the enemy), but meant "god" as in Iranian (see Keith 1925, I, 231ff.; and Konow 1926 for the earlier explanations).

THE VRĀTYAS AND THE PREHISTORY OF THE ŚRAUTA RITUAL

Although the two-wave hypothesis has not been very popular in the study of the Indian religion, it is also required by the fact that the śrauta ritual in the earliest form we know it is not only largely new in comparison to the R̥gvedic ritual but also contains in itself proof of a long prehistory.

A curious group of śrauta rites described in the Brāhmaṇas and Sūtras, called Vrātyastomas, has ever since 1850 attracted the attention of scholars on account of the unusual dress, social terms, manners, and cults of the people called Vrātyas for whom these rites are prescribed. The Vrātyas have been considered to be non-Vedic nomadic and raiding tribes, Aryan or non-Aryan, and their religion has seemed to represent a precursor of either the later Śaiva asceticism or the "heretic" religions of Magadha (see

especially Hauer 1927, I, which gives a survey of the earlier research).

Instead of taking the Vrātyastomas in the traditional way as rites effecting the incorporation of Vrātya "converts" into Vedic society, Biswas (1955, 9) suggested that they are rites of purification for "brahmanical" Aryans: the Baudhāyana-Śrautasūtra (18.26) relates in plain words that in former times the sons of Kuru brahmins went as Vrātyas on an expedition against the Pañcālas. These two tribes, the Kurus and the Pañcālas, inhabited the core area of Vedism. Heesterman, who has developed Biswas' thesis further, concluded that "the Vrātyas are authentic Vedic Aryans" (1962, 36). He has convincingly shown that the Vrātyastomas are a survival of a more archaic ritual from which the śrauta sacrifices have developed. The earlier "preclassical" ritual, which Heesterman has studied in several papers, was dualistic and cyclical, involving among other things alternating raids and potlatch-like competitions between rival clans. When the "classical" ritual was codified, the original cyclical pattern was broken, and the rites were made separate single sacrifices. At the same time "impure" acts, especially killing, were as far as possible eliminated and made symbolical (Heesterman 1962, 1964, 1967, and below, pages 51ff).

Although the establishment of the temporal precedence of the Vrātya rites over the classical śrauta ritual is a most important advance, I cannot agree with Heesterman when he goes on to state that no antithesis is involved in the relation between the Vrātyas and the Vedic Aryans, and that earlier explanations connecting the Vrātyas "with later developments, such as yoga and Śaivism . . . lose most of their urgency" (Heesterman 1962, 36). Converse (1974; cf. also Staal, *Agni*, I, 130ff and II, 18) has shown that the ukhā vessel, one of the central implements of the Agnicayana ritual, was baked with the inverted firing technique characteristic of the BRW. The Kurus and Pañcālas who mounted Vrātya expeditions are likely to have followed the pre-Vedic BRW traditions of their area. Moreover, we shall soon see that the old Vrātya rites in the main coincide with the distinctly antithetical Dāsa religion. In any case, Heesterman's researches have hardly invalidated the following important conclusion reached much earlier (Weber 1850, 51ff.; and more recently Horsch 1966, 402ff., 424ff.): the Brāhmaṇa and Sūtra descriptions of the Vrātyas relate them to contemporary peoples living outside the Vedic sphere, especially in Magadha, i.e., in areas that even at this later period continued to be inhabited by the BRW people. The pre-Vedic origin of Śaivism and Tantrism, on the other hand, is one of the chief conclusions emerging from my studies.

Vrāttinas 'those who live in marauding bands (*vrāta*)'—closely connected if not identical with the Vrātyas (Hauer 1927, I, 194ff.)—are, in LŚS 8.5, the performers of the Śyena, one of the foremost rites of black magic (*abhicāra*), described immediately before the Vrātyastomas (the name of the rite, Śyena, means "falcon," a symbol connected with the fire altar as well). The Vrātyas are moreover intimately connected with the Atharvaveda (Hauer

1958, 48ff.; Horsch 1966, 408f.), which is chiefly devoted to magic. In BSS 18.26 the Kuru brahmins warn their Vrātya sons of the curses of the Pañcālas. Altogether it seems that the Vrātya sorcery and the yātu magic of the Dāsas are one and the same thing.

All the texts describing the Vrātyas agree in specifying that they are accompanied by a prostitute (*pumścali*) and a bard (*māgadha*), who are otherwise mentioned together in the Vedic texts only as a couple who perform sexual intercourse in the Mahāvrata rite and in the list of victims of the human sacrifice. Hauer's (1927, 246ff.) identification of the Mahāvrata as a Vrātya rite has been generally accepted (e.g., Heesterman 1962, 10). Since it is the performers of the Mahāvrata who seem to be meant by the Ṛgvedic references to the Śiśnadevāḥ (cf. below, p. 49f.), the most distinctive features of the Dāsa religion (which radically differs from the Ṛgvedic Soma sacrifice)—sexuality and black magic—are attested in the Vrātya ritual.

The name *Vrātya* seems to have been used by the Dāsas of themselves when they were ritually consecrated into a sacred state in which they had to keep certain observances (*vrata*), often collectively as a group (*vrāta*) united by this characteristic.

CHARACTERISTIC FEATURES AND NATURE OF SOME PRINCIPAL VRĀTYA RITES

The most striking features of the Mahāvrata are the sexual intercourse of the bard and the harlot and the accompanying abusive dialogue. They have a close parallel in the horse and human sacrifices; the latter, practically speaking, are identical with each other, only the chief victim (a horse or a man, respectively) being different. The Vrātya affinity of these latter sacrifices is in my opinion confirmed by the traditional name of the verses (AV 20.136) that are applied in the ritual as the verses of abuse recited when the sacrificial victim is having sexual intercourse with the chief queen (*mahiṣī*) of the sacrificing king; these verses are called *āhanasyāḥ* 'obscene', and JB 2.222 expressly says of the Vrātyas that "they speak what is obscene" (*āhanasyam vadanti*). The non-Ṛgvedic origin of the Vrātya tradition is underscored by the observation made by Fišer (1966, 112) that the erotic terminology of the *āhanasya* verses "is completely different from what we have learnt in the RV."

The verb *ā + han-*, which in *āhanasya-* has the erotic meaning of "beating" the female with the penis (Fišer 1966, 46, 92, 113), is also used of the "beating" of drums at the Mahāvrata. Particularly significant is the fact that the "earth drum," which consists of a hole in the earth covered by a bull hide, is beaten with the severed *tail* of this bull. The tail here clearly represents the male organ of the sun bull fecundating the vulva of the earth goddess. In

addition to this erotic connotation I should like to call attention to the presence of the other dimension characteristic of later Tantrism: the sun bull is at the same time (symbolically) slain (*ā + han-*), like the actual victim of the human and horse sacrifice, the male partner of the sacred marriage rite. We shall return to this below. Here it is important to note that the double meaning "tail"-"penis" seems to solve the old problem (Fišer 1966, 85f.) connected with the Ṛgvedic Śiśnadevāḥ, where the word *śiśna* can be translated "tail" as well as "penis." The connection of the verb *ā + han-* with the Mahāvrata and the horse/human sacrifice is certainly not accidental. This verb is also used of the *dāsi* maidens (note this express connection with the Dāsas), who go around the mārjāliya dhiṣṇya at the Mahāvrata, and of the royal consorts and their female companions, who similarly go around the dead victim at the horse sacrifice: in both cases they "beat" their thighs, an act that likewise has a sexual connotation, for "thigh" stands for female organ (e.g., in Caland's translation of ĀpSS 20.18.4).

According to much Vedic evidence, the horse of the horse sacrifice belongs to and represents Varuṇa (the divine king par excellence and the lord of the primeval waters of chaos), as well as the creator god Prajāpati; the latter appears to be, as was suggested long ago, just another name for Varuṇa (Johansson 1917, 132f., n. 1). Prajāpati is the primeval being from whose sacrificed body the cosmos was created; the human victim of the Puruṣamedha also personifies this Puruṣa Nārāyaṇa. Since this primeval sacrifice apparently was repeated at every New Year's feast (see below), we can compare it to the sacred drama of the Babylonian New Year ritual, which also included a sacred marriage rite: two groups of actors mimed the struggle between Marduk, the god, and Tiamat, the monster of chaos, from whose slain body Marduk created the world (see Éliade 1965, 55ff.; and, in general, Hubert and Mauss 1964 [1898], 77ff.).

The horse sacrifice is normally combined with the construction of the fire altar (e.g., Yudhiṣṭhira's Aśvamedha in the Mahābhārata, Calcutta ed., 14.88.2633-2637); the building of the agniciti puts together the disintegrated body of the creator. Because the heads of the five victims put in the first layer of the fire altar apparently are those of the Aśvamedha, Heesterman (1967, 42) has suggested that the Aśvamedha and the Agnicayana originally formed an alternating and recurring ritual cycle. But the Agnicayana is closely connected with the Mahāvrata as well (Eggeling 1897, IV, xxiv ff.); and the bird form being shared by both the mahāvrata sāmān and the mahad uktha (which are sung and recited at the culmination of the mahāvrata) suggests that the mahāvrata may have been the original ritual context of the agniciti (cf. also Oldenberg 1917, 10). But on the other hand the horse/human sacrifice, which is preceded by a year-long roaming of the victim, and the year-long sacrificial session (*gavām ayana*) that culminates in the Mahāvrata may have originally been one and the same ritual.

The piling of the funeral monument is said to complete the piling of

the fire altar (ŚB 13.8.1.17): the parallelism between the Agnicayana and the Śmaśānacayana is evident from numerous common details. The intimate connection between the Mahāvrata and the Agnicayana is in my opinion sealed by the fact that rites parallel to those of the Mahāvrata are performed in connection with the śmaśānaciti. I am referring to the peculiar rite of "fanning" (*dhuvanam*), which must have become antiquated and unfashionable quite early but nevertheless is described as optional in the texts (Caland 1896, 135–140). There are, however, some differences between this *dhuvanam* and the Mahāvrata that seem to have the same nature as the differences between the śmaśānaciti and the agniciti. Caland (1896, 172ff.) has already explained them in terms that I consider correct: the difference is that between a sacrifice to the fathers and a sacrifice to the gods; among other things, the oppositions include old worn-out things against young and fresh things, and black against red.

This brings us back to the Vrātyastomas, which are classified according to their performers. The Nidānasūtra (6.11) expressly divides the Vrātyas into two groups and cites for them names that, however they are ultimately to be interpreted (cf. the suggestions of Heesterman 1962, 10), are connected with the concepts of "head and [severed?] male organ [lit 'reed']" (*dvaye vrātyā bhavanti: śiṣṭādayaś caiṣṭikayāvayaś ca*). The latter group is referred to in JB 2.226 as having had Kuṣīta as their gr̥hapati, while in PB 17.4.3 Kuṣītaka is the gr̥hapati of a group of Vrātyas "who have an unmoving, down-hanging male member" (*samanīcameḍhrāḥ*); in PB 17.4.1 their sacrifice is said to be the rite of the eldest Vrātyas, while LŚS 8.6.4 explains them to be "those who on account of old age (*sthāvirāt*) have lost their ability to generate." The Nidānasūtra's division can thus be matched with the other division of the Vrātyas into "the younger/youngest ones" (e.g., *kaniyāmsaḥ*, BŚS 18.26; or *kaniṣṭhāḥ*, PB 17.3.1) and "the eldest ones" (*jyeṣṭhāḥ*). The sons of the Kuru brahmins, who made a Vrātya expedition of an evidently aggressive nature (Heesterman 1962, 6, 15ff.), undoubtedly belong to the former group.

THE RITUAL CYCLE OF THE YEAR AND ITS TWO GREAT FEASTS

TB 1.8.4.1 and ŚB 5.5.2.3ff. inform us that it was in the cool season that the Kurus and Pañcālas regularly started their raiding expeditions, which were easterly directed and lasted the whole summer season. They returned westwards only immediately before the rainy season and thereafter ploughed their fields (Rau 1957, 15; Heesterman, 1957, 211). It is at the beginning and end of such occupational seasons that the seasonal rites of intensification are usually celebrated; they are festivals of crisis in which the symbolism of death and regeneration as a rule plays an important role.

Among the patrilineal clans of Karnataka, the most important yearly festival has until recently been performed with a human sacrifice and a communal meal of rice mixed with blood at the time men gather for their seasonal raiding expedition (Silva 1955, 577–583). This is not the only striking parallel that can be cited from the later Indian tradition to Heesterman's independent conclusion that "the vrātyastoma primarily celebrates the covenant between the vrātyas when setting out on a vrātya expedition, while on return a similar celebration takes place" (1962, 7). The description that the archaic Vādhūlasūtra (Caland 1926, §79) gives of the composition, dress, weapons, and other apparel of the army that accompanies the sacrificial horse on its expedition that initiates the Aśvamedha recalls the descriptions of the Vrātyas. The horse sacrifice is concluded with a sacred marriage rite resembling that of the bard and the harlot who accompany the Vrātyas, and the female partner (*mahiṣī*) symbolizes the earth ("this earth is a mahiṣī," ŚB 6.5.3.1). Among the matrilineal clans of Karnataka who practice agriculture, human sacrifices have been performed to increase fertility at the most important festival of the year, which marks the inauguration of the agricultural season (Silva 1955, 587–589).

Although fully agreeing with Heesterman on the originally cyclical nature of the Vrātya rites, including the Aśvamedha/Puruṣamedha and the Agnicayana, I would insist that in the last analysis the original ritual cycle consisted of nothing but one single year divided into two alternating halves of antithetical character. The spring-summer half of the year, which is spent by young men in warring, can be equated with the *uttarāyana* half of the year (when the sun "goes in the north"), which ŚB 2.1.3.1–3 associates with the gods (*deva*); the *daivāḥ vrātyāḥ* mentioned as one category of the Vrātyas (e.g., PB 17.1.1) would thus be synonymous with the "younger Vrātyas," their group of thirty-three (PB 17.1.17) representing the thirty-three gods (RV 3.6.9, etc.; cf. Macdonell 1897, 19; and Hopkins 1915, 55) during the "young year." The autumn-winter half of the year, which is spent in cultivation, can be equated with the *dakṣiṇāyana* half of the year (when the sun "goes in the south"), which is associated in ŚB 1c with the fathers (*pitaraḥ*), i.e., the dead ancestors; this "old year" would naturally be linked with the "elder Vrātyas."

In the liturgical arrangement of the śrauta ritual, the two halves that make up the year-long sacrificial session (*gavām ayana*) are symmetrical. The first six months culminating in the Viśuvat day are the mirror image of the next six months culminating in the Mahāvrata day, and these two great festal days coincide with the turning points of the sun (KB 19.3). On the analogy of the horse/human sacrifice, the sacred marriage rite of the Mahāvrata probably originally involved a human sacrifice, that of the male partner of the sexual union. There is some veiled evidence (PB 4.7.3) that the Viśuvat, too, involved a human sacrifice, and probably also a sacred

marriage, though in all likelihood one diametrically opposed to that of the Mahāvratā. This is suggested by the symmetry and the polarity (for which cf. also p. 38 above on agniciti ~ śmaśānaciti).

On the mythological plane, the "old" and "young" half of the year and the "elder" and "younger" Vratyas (fathers and sons) seem to have counterparts in the gods Varuṇa/Prajāpati and Rudra. I would connect the Vedic myth of Rudra's birth with the ritual of the Mahāvratā. This rite appears to have celebrated the incest of the old father (Prajāpati = the impotent Varuṇa with miraculously restored virility; AV 4.4.1-2) with his own sixteen-year-old virgin daughter (Uṣas = Aśādhā, the "invincible" goddess of victory, later Durgā). In the ritual as in the myth, the father was killed in punishment for his crime, originally by his own son (Rudra), the crown prince who succeeded his father (King Varuṇa) upon the royal throne. Or else the slayer of the god of winter, death, night, and chaos was his bride, the young goddess as the Mahiṣāsūramardīnī (the buffalo of this myth probably was replaced later by the horse as the sacrificial animal of Varuṇa/Prajāpati).

The other sacred marriage, that of the Viṣuvat, seems to have celebrated the incest of the old and barren mother (the Earth, *mahiṣī*, later Jyeṣṭhā and Kālī) and her young beautiful son (Kumāra = Rudra/Skanda), who had reached warrior's age and sexual maturity (at the age of sixteen) but had not yet had sexual intercourse. This hypothetical sacrifice probably was the proper ritual context of the legend of King Hariścandra and his son Rohita (= Varuṇa and Rudra), doubled by Ajigarta sacrificing his own son Śunaḥśepa.

The archaic Vādhūlasūtra (Caland 1926, §94) has preserved a unique passage that has not been properly understood nor attracted due attention: "They bring to the place as the cutter of the [sacrificial] horse this son of a famous bard [*etaṃ sūtaśreṣṭhasya putraṃ*], who is still a youth with unemitted seed [*kumāraṃ asiktaretasam*] after having adorned him, and [while bringing him] they lament him as if he was to die [*rudanto yathā marīṣyantam eva*]. For they say that in olden times [*purā*] he who first cut it [the horse], his head used to fall severed [*mūrdhā ha smāsyā vipatiṣyatīti*]." In the Mahāvratā the male partner of the sacred marriage is a bard (*māgadha*), and here the male partner of a similar sacred marriage (the horse) is cut by the son of a bard, whose own head will also be cut (presumably in a similar feast half a year later after he has led a victorious expedition). The word *kumāra* 'youth' is also the name of Rudra, and the verb *rud-* 'to lament, cry', which is also used in this text, is quoted in the Brāhmaṇas in explanation of the name Rudra: both of these key terms are attested in this way in ŚB 6.1.3.8-9. But no Vedic text other than the cited passage of the VSS reveals the original nature of this lamenting: Rudra is the Indian version of the dying and lamented young god who is so well known from such figures as Dumuzi/Tammuz, Attis, and Adonis.

In either feast the sacrificed male victim represents the divine sun king whose two aspects (spring/summer = day, and autumn/winter = night) are personified as son and father. The sacrificed male partner has ruled during the immediately preceding half year, while his bride or his successor represents the starting half year into which that preceding half year is fused in a "sacred marriage," or by which it is terminated. The vernal half was understandably conceived as a *kumāra* or *kumārī*, who remained "eternally young" and was each year represented by a new sixteen-year-old boy or girl who was necessarily a virgin.

THE AGE OF HINDUISM

We have indeed evidence that a virgin (*kumārī* . . . *asiktaretas*) was involved in the horse/human sacrifice (VSS, in Caland 1926, §93). In addition to ritual killing it also included the eating of the flesh of the human victim (VSS, in Caland 1928, §108) and large-scale sexual orgies (Caland 1926, §92). We thus have all the essential elements of Tantrism in the pre-Vedic Dāsa rituals.

It has been customary to view the history of Indian religions from the perspective affected by the chronological development of the literary sources. However, the corresponding periodization, as well as the commonly accepted view, which sees a more or less unilinear development starting from the "germinal" hymns of the Ṛgveda, is seriously distorted. It is imperative, especially when studying the religions of "timeless" India, to distinguish between the age of the contents and the age of the literary form of a given document. We have already discussed the relation between the old family books of the Ṛgveda and the younger Veda (RV I and X, the Atharvaveda and the Brāhmaṇas). Although the latter texts are younger as far as the chronology of their expression is concerned, the religion preserved in them often represents a more archaic stage of development than that of the Ṛgveda. Thus, instead of Soma, which is an Indo-Iranian innovation, the cultic beverages of the Dāsas were above all *madhu*, which goes back to proto-Indo-European times, and *surā* (Rönnow 1929; below, p. 49; Horsch 1966, 231f.).

The Vedic texts were fixed comparatively early. The epic and mythical lore of Hinduism, on the contrary, was handed down orally and hence was subject to continuous change and interpolation over a period of at least a millennium. Although much historical development undeniably has taken place in Vedic and post-Vedic times, the early Vedic references and parallels prove that the core of the Mahābhārata is very ancient (Weber 1891). Since the proto-epic tradition is certainly connected with the Vratyas (Horsch 1966, 54ff. and passim), I would go even so far as to suggest that it reflects the heroic age of the Dāsas of pre-Ṛgvedic times, in the same

way as the Homeric epics reflect the Mycenaean civilization that predates the invasion of the Dorian Greeks.

Be this as it may, the Hindu ritual, even as it is practiced today or very recently, appears to have preserved with singular fidelity rites many millennia old, in forms that are closer to the reconstructible Dāsa religion than those of the Veda. Thus a sword or sickle is used in decapitating the human and animal victims offered to the Goddess, in contrast to the Vedic ritual, where the victims are suffocated. Yet there is enough evidence in the Vedic texts to show that suffocation has replaced an older method of severing the head with a slaughtering knife (Heesterman 1962, 18f.). It is therefore wrong to consider Hinduism only a continuation of Vedism, as some scholars have been inclined to do. Although the Veda has secondarily exerted considerable influence upon Hinduism as represented by the epics and the Purāṇas, it is primarily an independent tradition, one directly continuing the Dāsa heritage.

THE RELIGION OF THE NON-VEDIC BLACK-AND-RED WARE AREAS

An overdue emphasis on the relative chronology of the literary sources has tended to distort the perspective in another way as well. The spread of the Vedic religion has been traced geographically from the Northern Indus valley and the Panjab, where the R̥gveda was composed, eastwards to the upper Ganges valley, where the oldest Upaniṣads were produced. More often than not this eastward movement has been supposed to have continued, in the sense that Buddhism and Jainism, which arose in Magadha, have been held to be indebted to the Upaniṣadic philosophy. The Mahāyāna of the Northwest, again, has generally been viewed only as a branch of Buddhism spread from Magadha.

With the exception of the relation between the Upaniṣads and the Magadhan "heresies" (a term illustrative of these preconceptions), for they are probably only indirectly connected (cf. Horsch 1966, 462), the view sketched above may be considered as legitimate, provided that its onesidedness is not forgotten. The areas peripheral to the Veda were not such religious vacuums as they have been more or less implicitly considered to be in the absence of sources that could in their age rival the Veda. We do possess some glimpses into the earlier history of religion in those areas, glimpses that should be accorded at least as much attention as the above mentioned diffusionistic influences when sketching the historical development.

Thus an acceptable explanation of Vajrayāna Buddhism seems hard to find. For example, von Glasenapp (1936) suggests a gradual development of this branch of Buddhism from original Hinayānic elements, while Schulemann (1958, 50f.) speaks of "the adoption of Yogic practices" and "diffusion of Dravidian deities of South India, borrowed from Śivaism." In re-

ality, the Vajrayāna appears to be nothing else than a Buddhist transformation of the earlier local Dāsa religion, from which we have some authentic records. The Mahābhārata (ed. Bombay 8.44-45) describes orgiastic Vṛātya (sic) feasts (abhorred by the orthodox teller) in Śākala (modern Sialkot). The Greek Megasthenes (ca. 300 B.C.) gives an account of the Dionysos worship in the mountain regions of India (Dahlquist 1962, 46ff. with further references), while Herodotus (ca. 450 B.C.) describes the habits of the tribes of Northwest India (3.99-101). Also the Vedic texts contain some references to the northwestern peoples, who were not reckoned among the Vedic Aryans. These and later Indian sources relating to the Northwest attest to a religion from which the Mahāvṛata and the other Vṛātya rites seem to be derived. One important theme to be studied further may be specifically mentioned here: the relation of the gandharvas and apsaras, connected in the epic sources with the northern mountains and the Northwest (Gandhāra), to the bards and the harlot with similar musical and sexual functions at the Mahāvṛata and the Aśvamedha.

The folk religion of Magadha from the sixth century B.C. onwards is relatively well known from the Buddhist and Jaina texts, especially the Jātakas that are based on popular tradition, and from the art. Tree and water spirits called yakṣas occupy a central position in this folk religion, and there is general agreement about their great antiquity (Coomaraswamy 1928, 1931; Gonda 1960, I, 323f.). ŚB 13.8.1.5 refers to the round burial monuments of the "demoniac" (*āśura*) people of the East (i.e., Magadha) as differing from the four-cornered śmaśānācītis of the "godly" people, i.e., the classical Vedic Aryans. The relation of the Vedic citi to the Buddhist stūpa (which is round) and its predecessor, the yakṣa caitya (which often consists of nothing but a sacred tree with a simple altar or dais), is a significant problem that deserves closer study (cf. Thapar, above, page 16). It has led me to a lengthy examination of the cult of trees, especially the banyan and aśvattha trees, in the Dāsa religion. There is evidence for the cult of trees in the Veda, but this important topic can merely be mentioned here, unfortunately.

THE HARAPPAN/DRAVIDIAN BACKGROUND OF THE DĀSA RELIGION

The cumulative results of these comparative studies, starting from the internal reconstruction based on Vedic texts alone, bring to the fore an archaic nature religion. It can be assumed a priori to have resulted from the syncretistic fusion of the early Aryan religion involving, among other things, chariot races and the horse sacrifice (Koppers 1936) brought to India by the Dāsas, and of the religion prevailing in North India at the time of the Dāsa invasion. We have seen that this invasion in all likelihood started early in the second millennium B.C. By that time the Harappan-related culture had

for a millennium predominated in the western half of North India, the area where the Dāsas first settled.

The religion of the Indus people has remained problematic on account of the scarcity and ambiguity of the surviving evidence. Briefly, it consists of the iconography and the short enigmatic inscriptions carved on seals or printed on sealings, the small terracotta figurines with animal and human forms, conical and circular stones that have been interpreted in sexual terms, and the more general archeological material—the cities with their baths and drains, the painted pottery, etc. (see especially Marshall 1931, I, 48–78). Renou (1953, 3) says, “If the forms of religion revealed in the seals and figurines of the Indus have any remote connection with Indian forms, it is not so much with those of Vedism as with those of Hinduism, a Hinduism which, though known to us only by inference, must have already existed in Vedic times, and probably considerably earlier. The Harappa inscriptions would no doubt tell us more on this subject, but until they are deciphered it is idle to try to explain. . . . In short, we are faced with a complete defeat in this quarter.” This view was more or less repeated by Sullivan and Gonda in 1964–65 when, independently of each other, they reviewed the various hypotheses put forward about the religion of the Indus civilization, especially the comparisons with later Hinduism; they both found them all to be ambiguous and inconclusive. It must be conceded that Hinduism is a vast and heterogeneous religion that offers various possibilities of interpretation of its mute archeological remains. Moreover, since classical Hinduism is separated by a gap of some two millennia from the Indus civilization, it is quite justifiable to suspect the legitimacy of such parallels as long as the gap is not bridged.

It makes an essential difference to be able to compare the Indus material to a sort of proto-Hinduism that prevailed in post-Harappan times immediately before the R̥gveda. Although the reconstruction of the Dāsa religion necessarily remains defective and to some extent hypothetical, some prominent features stand out clearly. It does carry some weight if these very features are also attested in the Indus evidence, and this indeed seems to be the case. I can quote here just a few important examples.

Mode (1959, 69–71) has plausibly interpreted a seal from Chanhudaro (Mackay 1943, pl. 51 no. 13) as depicting the copulation of a bull and a priestess. He also has compared this scene with the sacred marriage of the Aśvamedha, which already had been interpreted as a continuation of a pre-Aryan bull cult with phallic fertility rites; such cults are known to have existed in the religion of the early West Asian civilization. Since Vajrayāna Buddhism may represent a transformation of the pre-Vedic Dāsa traditions, the copulation of Yama's buffalo with an old woman in the Vajrayānic iconography could also be a genuine reminiscence of the pre-Aryan bull cult. Yama as the righteous king with the strangling noose (*pāśa*) as his emblem is very similar to the early Vedic god Varuṇa, the Asura par excellence and the rival of Indra (RV 4.42); Varuṇa also has been plausibly interpreted as an early form of Prajāpati (see above, page 37).

In another Indus seal (Mackay 1938, II, pl. 99A) a human head has been placed upon a dais that stands beneath a sacred fig tree inhabited by an anthropomorphic deity (the shape of the head is indistinct in the photograph, but not in the original seal kept at the National Museum, New Delhi). The presence of a kneeling priest suggests that the scene is sacrificial, so the severed head of a human victim is meant rather than an iconic portrait of some deity.

In 1973 I pointed out that “the elaborate canons of bricklaying [related to the Vedic fire altar] cannot be traced back to Aryan traditions [outside India] but only to the brick-built cities of the Indus civilization” (Parpola 1977). This point has also been independently raised by Converse (1974) in a paper discussed in Volume I (pp. 130–137). In the original larger version of the present paper I have some important points to add concerning the relation of the agniciti to the vāstupuruṣa = Rudra and to house building, which must have been an important ritual in the Harappan religion.

For the Indus script and its decipherment I refer the reader to other articles of mine (Parpola 1975, 1976). The reader is also referred to these and to the present paper (pp. 42–44, 62ff.) for evidence that the suggested Dravidian solution is in agreement with the results of historical linguistics and their integration with archeological data and can be checked by means of internal controls. A forthcoming study will also provide further support for the astral nature of the Harappan (priestly) religion hypothesized on the basis of the inscriptions and evidenced archeologically by the orientation of the cities.

I can point out two further controls for the hypothesis of the predominantly Harappan/Dravidian origin of the reconstructed Dāsa religion. One is derived from comparison with the religions of other early agriculturally based city civilizations that have a very similar ecological context and development (Steward 1955). In Babylonia and in ancient Mexico the New Year feast with its sacred marriage ritual, which in the latter case was accompanied by a human sacrifice, was also very prominent. And in ancient China the year was divided into two halves of polar opposition. The other control is provided by the religion attested in the Old Tamil texts, which constitute the only ancient (two thousand years old) non-Aryan literature that has not yet been so contaminated by Aryan contacts that it would not be possible to distinguish the characteristic features of the native religion. In this case, too, the overall picture (for which see especially Hart 1975) is very similar to the emerging Dāsa religion.

THE IDENTITY OF THE KIMPURUṢA

There is at least one more way in which Dravidian elements of the Dāsa religion can be identified as such: the philological and linguistic study of its

PLATE 7A
Bull and Priestess from Chanhudaro

PLATE 7B
Priest Kneeling Before Human Head, Mohenjo-Daro



A



B

PLATE 8

Yama
One of the Drag gsed or Eight Fearful Ones
(Tibetan painted scroll).



key terminology, which may contain direct or translation loans from Dravidian. In this last section of the present paper, I shall illustrate this method by presenting one concrete example, which is also quite new. I have studied the problem posed by the term *kiṃpuruṣa* in greater detail, but the exposition, again for reasons of space, has here been restricted to the essential points.

In the epic and classical Sanskrit literature, the words *kiṃpuruṣa* and *kiṃnara* or *kinnara* are of frequent occurrence. They denote mythical beings who, in the paradisiacal lands of the northern mountains, serve their lord, the god of riches Kubera. These demigods usually appear in hosts, and they are often mentioned together with other kinds of Kubera's servants such as yakṣas, guhyakas, and the like. Most frequently, however, they are classed together with the naras and the gandharvas (in one place the kiṃnaras and the naras are said to be two kinds of gandharvas). All these last-mentioned beings are described in very similar terms. They are skilled singers, musicians, and dancers. The males and females are both very beautiful and noted for their love affairs, while the men are also fierce fighters. Their outward appearance is half human, half animal, the animal part being usually a horse, or sometimes a flying horse or a bird (Böhtlingk and Roth 1858, II, 284, 288; Sörensen 1925, 407f.; Hopkins 1915, 142–159). The Middle and Neo-Indo-Aryan counterparts of these words have essentially the same meaning.

At first sight the word *kiṃpuruṣa*, which already occurs several times in the Veda, is quite clear and straightforward Sanskrit; a compound of *kim* 'what? which?' (neuter singular of the interrogative pronoun) and *puruṣa* 'man'. But what particular kind of being was originally intended by this "what-man"? No unanimity has been reached by Vedic scholars, who have from the start been conscious of this problem; various solutions have been suggested: "mock-man," "depraved man," "deformed man," "dwarf," "savage," "ape," but it has usually been admitted that the sense is doubtful. In judging these translations it is important to be aware that the interrogative pronoun as the first member of compounds expresses inferiority, deficiency, and reproach (Pāṇini 2.1.64 and 6.3.106; Wackernagel 1905, II.1, 82ff.). The most important previous study of the word *kiṃpuruṣa* is that by Rönnow (1929, 145–149), who also discusses the earlier literature on the subject. Rönnow himself comes to the conclusion that the *kiṃpuruṣa* of ŚB 7.5.2.32 etc. is none other than the sacrificed human victim, whose head is placed on or in the ukhā vessel. I want to emphasize that Rönnow has already clearly shown the important position this sacrificed human victim and his head (see also Heesterman 1967) occupy in the "pre-Vedic, asuric religion" (i.e., the religion of the Dāsas), which Rönnow, too, was reconstructing.

My own conclusion is that Rönnow is right, but that in addition there

is much reason to take seriously the Indian commentators, whose views have been ignored as anachronistic; they include in their considerations the later meaning of the word, which seems to be derivable from the Vedic evidence. To be more precise, in my opinion *kiṃpuruṣa* denoted a human victim whose profession was that of the bard, and who was decapitated in connection with a sacred marriage feast. In this sense the word is synonymous with *māgadha* (a bard that hails from Magadha, cf. Horsch 1966, 404f., 424f.) of the Mahāvratā and with *gandharva* (probably a bard who is a native of Gandhāra, the northwestern mountain region). In the Vedic literature, the gandharvas are connected with the consummation of marriage, where they have the *ius primae noctis* (RV 10.85.21–22 and 40–41; BGS 1.5.16ff.; ĀpGS 3.8.8ff.). According to ŚB 11.5.1.11–12, Purūravas ("crying much or loudly," Mayrhofer 1963, II, 313) was to come to lie with the apsaras Urvaśī for one night, the last of the year, when his son would have been born; in the morrow of that night (i.e., after his sacrificial death in this sacred marriage rite; Kosambi 1962, 54; Wright 1967, 527) he was to become a *gandharva* (i.e., a demigod, "celestial" musician). In the Mahābhārata (Calcutta ed., 14.88.3638–3643), *gandharvas* (and *kiṃpuruṣas* and *kinnaras*) are singers and dancers who entertain the priests during the intervals of the ritual acts at Yudhiṣṭhira's horse sacrifice, and so are comparable to the harp players of the horse sacrifice in the ŚB (13.4.3.1ff.).

In the Vedic texts the word *kiṃpuruṣa* is chiefly attested as denoting the two-footed one among the five sacrificial victims (the four-footed are the buffalo, gayal, camel, and deer) that are consecrated but released at the horse and human sacrifice. These five victims correspond to another set of five victims (man, horse, ox, sheep, goat), whose heads are placed in the lowest layer of the fire altar. (Cf. Vādhūlasūtra in Caland 1927, §19a, ŚB 1.2.3.9; AB 2.8). On this occasion, mantras are employed in which these latter "tame" animals related to the "village" are delivered of "burning heat," which is conjured to enter the first five animals explicitly connected with the "forest" (*aranya*) in these formulae (KS 16.17; KapS 25.8; MS 2.7.17; TS 4.2.10; VS 13.41–51; for the ritual, BSS 10.34). To my mind, the contrast between the village and the forest (Malamoud 1976) is here related to the polarity of the winter and summer halves of the year, respectively; the forest is connected with violence, robbing, warring, and Rudra. The two sets of five victims were probably sacrificed each at its corresponding seasonal feast in the earliest ritual. The *puruṣa* and *kiṃpuruṣa* in these lists could possibly be equated to the brāhmaṇa bard and the rājanya bard, who at the Aśvamedha sing improvised gāthās to the accompaniment of a harp (*vinā*) during the day and night, respectively. The former sings on such peaceful activities of the king as "such sacrifices he offered, such gifts he gave"; the latter, being obviously a war bard, sings on such topics as "such war he waged, such battle he won!" (ŚB 13.1.5.1–6; 13.4.3.1ff.)

In the aforementioned release mantras, *kiṃpuruṣa* is replaced by the

word *mayū*, while in the corresponding lists of ŚSS 16.3.13 and 16.12.12–13 *māyu* is the epithet of *kiṃpuruṣa*. The word *māyu* is derived from the verbal root *mā-* ‘to bellow, roar, bleat’, which normally denotes the “bellowing” of cows or “bleating” of goats as, for instance, in *ajā-māyu* (RV 7.103.6, 10), an epithet for the croaking frogs that is a metonymy of the chanting and reciting brahmins. As this example shows, the word might also refer to singers. In RV 10.95.3, the hymn of Purūravas and Urvaśī, it is said of the gandharvas that “the sounding ones have been understood to bleat like an ewe” (*ūrā nā māyūm citayanta dhūnayaḥ*). In AV 6.38.4 and 19.49.4 mention is made of *puruṣasya māyū* ‘man’s roar’ (Whitney 1905), where *puruṣa* in all likelihood is the same as *kiṃpuruṣa*, as Whitney suspected; the context, which speaks of a “noble” (*rājanya*), “[war] drum,” “drawn [arrow],” and “horse’s vigor” in the first of these verses, is very suggestive of the war bard; cf. also *ūrdhvā-māyu* ‘shrill-crying’ as an epithet of the war drum in AV 5.20.4. In regard to the later meaning of *kiṃpuruṣa*, it is worth noting that the late lexicographers mention *mayurāja* as a name of Kubera and *māyurāja* as a son of Kubera.

In the list of the symbolic human victims of the Puruṣamedha, the *kiṃpuruṣa* is assigned to the mountains (VSM 30.16 = VSK 34.3.3; TB 3.4.12). As in the epics, the word here is undoubtedly associated with the northern mountains. In the sources just cited, the *kirāta* assigned to the caverns denote the mongoloids of the Himalayas, especially of the Nepal region, who live in caves (*guha*) as do the *guhyakas*, a class of Kubera’s servants. In BŚS 2.5: 40.5f., where the sacrificer conjures his bodily defects to enter into things or beings of a similar nature, the weeping, wailing, or lamentation (*roda*) is connected with the *kiṃpuruṣa*; I refer here to the lamentation that accompanies the young son of a noble bard who is going to lose his head according to the VŚS (see above, page 40).

From Māgha’s Śiśupālavadha (4.38) we learn that the *kiṃpuruṣa* is a demigod with a horse’s head and a human body, while the *kiṃnara* has a man’s head and a horse’s body. Speaking of these two kinds of beings and the gandharvas, Hopkins (1915, 158f.) states that in the epic “there is little to indicate that any of the three classes was of equine form at all and only the mention of *Kiṃnaras* and *Kiṃpuruṣas* support the [late] difference genealogically.” It seems quite evident that the differentiation between *kiṃnaras* and *kiṃpuruṣas* is secondary; in Sanskrit, *nara* ‘man’ is a synonym of *puruṣa* ‘man’, and only the *kiṃpuruṣa* is spoken of in the Veda. But if *kiṃpuruṣa* originally was a human being, a war bard, how did this idea of a centaurlike being originate?

In the Vedic Puruṣamedha, both a man and a horse were sacrificed (VŚS in Caland 1928, §108), originally by cutting off their heads. It seems that in some cases at least, the heads were exchanged, resulting in a situation that accurately corresponds to the one quoted above from Māgha. This may be concluded from the legend of Dadhyañc Ātharvaṇa (already referred

to as a horse-headed being in RV 1.116.12) in ŚB 14.1.1.18–24. Dadhyañc knew the secret of “how this head of the sacrifice [i.e., of the sacrificed *puruṣa*] is put on again, how this sacrifice becomes complete.” Indra forbade him to teach it to anyone else, threatening to cut off his head. The Aśvins (the medical gods connected with the horse), however, wishing to learn the secret, promised to protect him: “When thou wilt have received us as thy pupils, we shall cut off thy head and put it aside elsewhere; then we shall fetch the head of a horse, and put it on thee: therewith thou wilt teach us; and when thou wilt have taught us, then Indra will cut off that head of thine; and we shall fetch thine own head, and put it on thee again.”

The secret of Dadhyañc was the *madhuvidyā*, the knowledge of the cultic beverages *madhu* and *surā* intimately connected with the head of the sacrificial victim (Rönnow 1929; Heesterman 1967). *Surā* is related quite specifically to the *gāthā* singers, both of these being discriminated on the side of the R̥gvedic Soma cult (Horsch 1966, 231f.). Much *surā* was consumed in the orgiastic Vratya feasts of the Northwest involving a sacred marriage and a human sacrifice (Mahābhārata, Bombay ed., 8.44.1ff). In the Northwest reside also numerous warrior tribes connected through their name with the horse, such as the Assakenoi of Alexander’s historians and the Aśmakas or Aśvakas (Das Gupta 1972); there are even people called “horse-faced” (Aśvamukha, Turagānana) (Kirkfel 1920, 88f.). It can be assumed that such names are derived from their practice of wearing the skin and head of the sacrificed victims during the feasts; in ancient Mexico, for example, the dead human victim was flayed and his skin was put on the one who was to succeed him in the following year in order to carry the sacredness over to him (Hubert and Mauss 1964, 73). Gandhāra and other northwestern countries have been famous for their numerous horses (Law 1943, 12). The epic praises the gandharvan breed of horses, and also knows the gandharvas themselves as warriors who are revived by a rain of ambrosia after they have been slain in battle (Hopkins 1915, 155). References can also be made to the archeological evidence: the graveyards of Swat contain skeletons of horses (Silvi Antonini and Stacul 1972, 288, 291) and human skeletons whose heads have been severed from the trunk (pp. 194 and passim).

We can now turn to the linguistic analysis of the word *kiṃpuruṣa*. First of all, I want to draw attention to the fact that both components of this word, *kim* and *puruṣa*, happen to be among those few words of clearly Prakritic origin that are attested in the R̥gveda (Emeneau 1966, 130f.). This can be taken as further evidence for its pre-Vedic, Dāsa affinity, for both the Vratyas (PB 17.1.9 and the interpretation of Weber in Horsch 1966, 418 n. 2) and the “demoniac” Mlecchas whom the Vedic Aryans encountered in the east (ŚB 3.2.1.18ff.; Thieme 1938, 3f.) spoke Prakrit.

But what has all this to do with Dravidian? The most characteristic feature of the Prakrit languages in comparison with Sanskrit is the simplification of the consonant clusters through assimilation, anaptyxis, and si-

milar processes. This seems to be mainly due to the adaptation of Indo-Aryan to the Dravidian pattern of their mother tongue by the first bilingual generations who initiated the Aryanization of Dravidian North India. Dravidian has originally no initial consonant clusters and in the middle of the word only double consonants and clusters of homorganic nasal + voiceless stop (Zvelebil 1970, 76f.) The phenomenon is paralleled by the changes of Sanskrit loanwords in Tamil, which has preserved the proto-Dravidian phonology very faithfully (e.g. Tamil *tottiram*: Sanskrit *stotram*). It has been suggested that such structural Dravidianisms of the R̥gveda as retroflexion have been derived from the early Prakrits (Killingley 1969). This is plausible in view of the chronology presupposed by these early Dravidianisms (Kuiper 1967, 96f.).

This is not all. In addition to the word *kin̐nara* or *kinnara* m. 'mythical musician' and the corresponding feminine (°rī), there are in Indo-Aryan the following words denoting "a kind of stringed instrument, a lute of the Caṇḍālas": Sanskrit *kin̐narā* f. (lex.), *kin̐nari* f. (lex. and Kathāsaritsāgara 37. 64), Sindhi *kin̐iro* m., and Marathi *kin̐ri* f. Against this rather meager representation on the Indo-Aryan side, we have corresponding words likewise meaning "a stringed musical instrument" in nine Dravidian languages representing all of the three main branches: Tamil and Malayalam *kinnaram*, *kinnari*, Kannada and Tulu *kinnari*, Telugu *kinnara*, *kin̐nera*, Parji *kindri*, Kuvi (F.) *kin̐eri*, Kurux *kendrā*, and Malto *kéndre*. The Dravidian words are considered borrowings from Indo-Aryan, and the name of the instrument a secondary derivation from "musician," with the traditional etymology *kim* (used pejoratively) + *nara* 'man' (Mayrhofer 1956, I, 210; Turner 1966, no. 3145; Burrow and Emeneau 1972, 478 = DBIA S 5). On the face of this evidence, however, it seems to me that the name of the musical instrument is primary, and that the Indo-Aryan words are of Dravidian origin. It is easy to find parallels for the semantic development from "harp" to "harp player" (witness a modern orchestra). Moreover, if the original Dravidian word was *kinnaram*, Sanskrit *kin̐puruṣa* is obviously just an early (pre-Vedic) Indo-Aryan folk-etymological interpretation.

If the word *kinnaram* indeed is native Dravidian, then the Tamil, Malayalam, and Telugu words have an analogical *k-* caused by the Indo-Aryan influence (Sanskrit *kinnara-*) instead of the expected *c-*, palatalized before a front vowel (in the other Dravidian languages the original *k-* in this position is usually retained; Zvelebil 1970, 116ff.). Zvelebil (p. 118) also notes that "there is, however, a number of residue forms [in Tamil, Malayalam and Telugu] probably due to dialect mixture or borrowing (from non-palatalizing Kannada) which do not conform to this rule [of palatalization]." Monosyllabic roots, both nominal and verbal, may normally occur in Dravidian as the first members of compounds (e.g. DED 2473 *taṇ-ṇir* 'cold water', DED 2435 *tak-appan* 'father [who is worthy of respect]'; Zvelebil 1973, 35, Beytham 1943, §74 i.f.). The variant *nara* 'mythical musician

similar to *kin̐nara*' suggests that *kin-naram* originally is a compound that is to be segmented as in Sanskrit. The first element of this compound could thus well be the Proto-Dravidian root *kil* 'to (re)sound' (DED + DEDS no. 1311, attested from Tamil all the way to Kuvi), which in all likelihood is originally identical with the onomatopoeic *kil-kil*, *kilu-kilu*, *kila-kila* 'to clink, tinkle, resound with noise' (DED 1312, attested from Tamil to Kui, and borrowed into Sanskrit as *kilakilā* 'sounds of joy'). Before the following nasal of *naram*, the final lateral has naturally assimilated: *l* → *n/_n*. In several languages the root *kil* 'to (re)sound' appears in the alloform *kel*, which would conform to the North Dravidian forms (Kurux *kendrā*, Malto *kéndre*). In Tamil this root is found, as expected, as *cil* or (augmented) *cilai*. Among the derivatives in Tamil we have *cilampal* 'sound of lute' and *cilai* 'bow' and its 'musical twang', the latter very well attested in the Old Tamil texts (Akam 38.3, etc.; Subrahmanian 1966, 365), and Tivākaram by Cētanār records for the corresponding verb the meaning "to twang, as musical instrument." In view of the epithet *māyu* that *kin̐puruṣa* has in the Veda, and his connection with *roda-* 'lamentation, crying', it may be worth while to note that the root *kil* also means "to utter a shrill cry (of joy or fear), weep, lament."

The second part of the compound could be the Proto-Dravidian root *ṇaral*, *naral*, *naraku*, etc., meaning "to sound, make noise, hum (as many voices), grumble, groan, roar," which is attested in all branches of Dravidian from Tamil to Malto (DED 2365). In Tamil we have from this root *naralvu* 'sounding, roaring, high pitch, vibrating sound of a lute', and *narampu* 'the string of the harp (*yāl*)' (also 'the particular tune appropriate to the string', and 'stringed instrument'), which is attested very many times in Old Tamil texts, including the most ancient one (Tolkāppiyam, E1. 33; Akam 109.2; see also Subrahmanian 1966, 479, and Tamil Lexicon, s.v.). Another possibility is the Proto-Dravidian word *ṇarampu*, *narampu* 'nerve, sinew, vein' (DED + DEDS + DEN no. 2364, attested from Tamil to Malto), from which we have forms like Kannada *naravu*, *nara*, Tulu *nara*, Telugu *naramu*, Kolami *naram*, Gondi *naral*, *naram*. Sinews have been used as bow and harp strings, and so the former item seems to be derived from this word.



Kin-naram thus might well be a genuine Dravidian bahuvrīhi compound, meaning literally '(musical instrument) with a resounding string,' a most appropriate name for 'a stringed musical instrument, harp,' which is the widely recorded denotation of *kinnaram* both in Dravidian and in Indo-Aryan. The credibility of this Dravidian etymology is enhanced also by the extraordinarily important role played by the many different kinds of bards and their (deified) musical instruments (above all the harp and the drum, both prominent also in the Mahāvraṭa) in the most ancient, native Tamil religion and culture; note also that one of the two poetical genres, *puṇam*, was heroic war poetry; the other one, *akam*, was the sexual love lyric (Kailasapathy 1968; Hart 1975, 138ff.)

There are, however, also the following phonetically and semantically very similar words from the Near East, about whose relation to the Indian material Mayrhofer is hesitant (1956, I, 210 "Aber sollte der Anklang . . . blosser Zufall sein?"): Old Babylonian **kinnārum* 'lyre' (^{GI}*ki-in-na-ra-tim*, CAD K, 1971: 387b; von Soden 1965, VI, 480b 'Indian zither'), attested in Mari (18th cent B.C.) and slightly later in Ras Shamra (Ugarit), where the word, written syllabically ^d*GI*ki-na-rum* and alphabetically *knr*, occurs as a deified cult object (Nougayrol, *Ugaritica*, 5, 1968, 45, and discussion p. 59); Syriac *kennārā* 'lyre'; Egyptian (New Kingdom *k(#)-nū-rū* (Helck 1962, 540; on a papyrus of about 1300 B.C. according to Sachs 1940, 102, where the word is transcribed *k'nn'r*) and Neo-Egyptian *kniniwr* 'lyre' (Erman and Grapow 1931, V, 132, attested in Papyrus Anastasi IV 12.2; cf. idem., 1959², Belegstellen, 5, 20; "the late Egyptian or Coptic form, *ginēra*," cited by Sachs 1940, 102, is unknown to the Coptic dictionaries), both words being considered as loanwords from Canaanite; Hittite *kinirtalla-* 'a sort of musician (zitherplayer?)' (Friedrich 1952, 110); Arabic *kinnāra*, *kinnīra*, *kinārun*, *kannāratun* 'lyre' (Hickmann 1970, 64); Hebrew *kinnōr*, plur. *kinnōrōt* (fem.) 'a stringed musical instrument (probably lyre)' (Gen. 4:21, 31:27, etc., played by ecstatic prophets and by David as a shepherd, 1 Sam. 10:5, 16:16ff.), whence Greek *κινύρα*, *κινύρα* 'lyre' (LXX, 3/2 cent. B.C. and in the first cent. A.D. in Josephus, *Antiquitates Judaicae* 7.12.3, where it is described as a ten-stringed musical instrument played with the fingers; cf. also for Syriac, Koehler and Baumgartner 1954, 443; Stewart 1917, 387b; and Sachs 1940, 107).*

We know for certain that Harappan traders visited and probably even resided for long periods in Mesopotamia and the islands of Failaka and Bahrain in the Persian Gulf, at least from the 24th to the 20th century B.C. (Gadd 1932; Parpola, Parpola, and Brunswig 1977). A Harappan seal (which in its round form agrees with the seals of the Persian Gulf civilization but differs from the native Harappan square seals found in India), inscribed with the Indus script characters, was excavated in 1970 in Bahrain. In the present context it is significant that this seal was associated with a cuneiform tablet, dated with the help of orthographic conventions to approximately the 20th century B.C.: the tablet contained three Amorite personal names (Brunswig and Parpola, in press). The Amorites, who in the early second millennium B.C. penetrated Mesopotamia from the west in growing numbers, constituted a very considerable ethnic component of the Old Babylonian kingdom of Mari, where the word *kinnārum* is first attested.

From the above evidence it seems possible that all the Near Eastern words, Old Babylonian *kinnārum* included, actually go back to an Amorite etymon. Yet the word looks decidedly non-Semitic in its structure (Jussi Aro, oral communication). It would seem possible to connect Dravidian *kin-nara(m)* with *kinnārum* by assuming that it was, as a cultural word, borrowed by the Amorites from Harappan traders in the entrepôts of the Persian

Gulf (cf. the later introduction of the instrument and its name from Canaan to Egypt: Helck 1962, 540). This would have taken place in the 20th century B.C., leaving just enough time for the *kinnārum* to become a thoroughly assimilated Amorite item by the 18th century. The Amorites cannot have reached the Persian Gulf much earlier, and the word was in all probability borrowed just there and not in Mesopotamia, because the word is not found in Sumerian. The lengthening of the final *a* in this process may have been caused by a possible side accent in the Dravidian word, but more likely because it was mediated by the Sumerian merchants living in the Persian Gulf in the 20th century and earlier. In Semitic, the final vowel of the words borrowed from Sumerian is often lengthened (e.g. *makkitu* < *m ā-g i d*), the reason for this being in all likelihood the Sumerian accent, which to some extent can be compared to that of modern French (Krecher 1969). The archeological evidence proves beyond doubt the presence of both the Sumerians and the Harappans in Bahrain and Failaka, whose Dilmun culture moreover in various ways exhibits "a cultural influence and a borrowing and amalgamation of elements from both the Sumerian and the Indus Valley Civilization" (During Caspers 1973, 6).

It remains to be pointed out that the Indus script contains a pictogram,  with an allograph  (Marshall 1931, III, pl. 105 no. 46; Vats 1940, pl. 100 nos. 680 and 692), which many authorities have interpreted as depicting a harp (Sachs 1940, 152; Knorozov 1968, 16). It has the same form as the oldest historically known Indian harp, the *vīṇā* in its early form (for which see Coomaraswamy 1930; and Marcel-Dubois 1941, 72ff.), and the hundred-stringed harp (*vāṇa śatatantu*), which occupies a prominent position in the Mahāvratā, a most important Dāsa rite of the Vedic ritual (LŚS 3,12,15ff.; JB 2, 45; BŚS 16,20f., etc.).

Moreover, *kinīro* is still played in Sind today, four thousand years after the fall of the Indus civilization. In view of the minimal spread of the mainly lexically attested Indo-Aryan material for the meaning "stringed musical instrument," it is difficult to see how Sindhi could have borrowed this word from Sanskrit. As in the case of the solid-wheel cart, which has to the present day in Sind remained identical with its Harappan prototypes in spite of all the technological innovations in the meantime (e.g., Marshall 1931, III, pl. 154 nos. 10–11), we seem to have here one of those cases—witness also the Kerala Agnicayana!—where millennial traditions have survived in India. The Jaina lexicographer Hemacandra (1089–1172 A.D.), who lived in Gujarat, a territory that in pre-Aryan times belonged to the Harappan realm, specifies that *kiṃnari* is a lute of the Caṇḍālas (Abhidhānacintāmaṇi, śeṣa 82, cited by Böhtlingk and Roth, 1855–1875, s.v.), i.e., of despised aboriginal tribes. Marathi, the only other living Indo-Aryan language in addition to Sindhi to have the word, is the Neo-Indo-Aryan language that contains by far the largest number of Dravidian loanwords (cf. the indexes of DED and DEDS). It has been pointed out that "the 'standard' Marathi of the hi-

gher castes shows less influence of Dravidian than lower-caste Marathi," and the analysis of the data "would lead to the hypothesis that those with more Dravidian features in their speech had originally been Dravidian speakers, and had later replaced their home language by Marathi" (Southworth 1974, 219f.). Indeed, such a process seems to have taken place not only in Maharashtra but also in Gujarat and Sind, where the earlier population was according to Southworth (p. 222) "probably mainly Dravidian-speaking".

BIBLIOGRAPHY

- Agrawal, D. P. (1966). "C¹⁴ dates, Banas Culture and the Aryans." *Current Science*, 35.5, pp. 114-117.
- _____. (1968). "An Integrated Study of the Copper-Bronze Technology in the Light of Chronological and Ecological Factors (ca. 3000-500 B.C.)." Thesis, Varanasi, Bombay.
- Allchin, B., and Allchin, R. (1968). *The Birth of Indian Civilization: India and Pakistan Before 500 B.C.* Harmondsworth, Eng.
- Bailey, H. W. (1959). "Iranian *arya-* and *daha*." *Transactions of the Philological Society*, pp. 71-115. Oxford.
- Benveniste, É., and Renou, L. (1934). *Vrtra et vr̥θragna: Étude de mythologie indo-iraniennne*. Cahiers de la Société Asiatique, 3. Paris.
- Beythian, H. (1943). *Praktische Grammatik der Tamilsprache*. Leipzig.
- Biswas, S. N. (1955). "Die *Vrātyas* und die *Vrātyastomas*." Doctoral thesis, Freie Universität, Berlin.
- Böhtlingk, O., and Roth, R. (1855-1875). *Sanskrit-Wörterbuch*, 1-7. St. Petersburg.
- Brunswig, R. H., Jr., and Parpola, A. (in press). "New Indus Type and Related Seals from the Near East," *Kuml* (Århus).
- Burrow, T., and Emeneau, M. B. (1961). DED = *A Dravidian Etymological Dictionary*. Oxford.
- _____. (1968). DEDS = *A Dravidian Etymological Dictionary: Supplement*. Oxford.
- _____. (1972). DEN = "Dravidian Etymological Notes: Supplement to DED, DEDS, DBIA, pts. 1-2." *Journal of the American Oriental Society*, 92, pp. 397-418, 475-491.
- CAD = *The Assyrian Dictionary of the University of Chicago*. Vol. K (1971). Chicago.
- Caland, W. (1896). *Die Altindischen Todten- und Bestattungsgebräuche*. Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam, Afd. Letterkunde, 1:6.
- _____. (1921-1928). *Das Śrautasūtra des Āpastamba aus dem Sanskrit übersetzt*. Vols. 1-3. Quellen der Religionsgeschichte, 8. Göttingen und Leipzig. Verhandelingen . . . Afd. Letterkunde, 24: 2, 26: 4. Amsterdam.
- _____. (1925). "Eine dritte Mitteilung über das Vādhūlasūtra," *Acta Orientalia*, 4:1, pp. 1-41; 4:2, pp. 161-213.

- _____. (1927). "Eine vierte Mitteilung über das Vādhūlasūtra," *Acta Orientalia*, 6: 2-3, pp. 97-241.
- Converse, H. S. (1974). "The Agnicayana Rite: Indigenous Origin?" *History of Religions*, 14:2, pp. 81-95.
- Coomaraswamy, A. K. (1928-1931). *Yakṣas*, 1-2. Smithsonian Institution, Publications 2926, 3059. Washington, D.C.
- _____. (1930). "The Parts of a Vīṇā," *Journal of the American Oriental Society*, 50, pp. 244-253.
- Dahlquist, A. (1962). "Megasthenes and Indian Religion: A Study in Motives and Types." Doctoral thesis, Uppsala.
- Das Gupta, K. K. (1972). "The Aśvakas: An Early Indian Tribe." *East and West*, n.s., 22: 1-2, pp. 33-40.
- DED, DEDS, DEN. See Burrow and Emeneau.
- During Caspers, E.C.L. (1973). "Harappan Trade in the Arabian Gulf in the Third Millennium B.C." In *Proceedings of the Sixth Seminar for Arabian Studies Held at the Institute of Archaeology, London, 27th and 28th September 1972*, pp. 3-20. London.
- Eggeling, J. (1882-1900). *The Śatapatha-Brāhmaṇa According to the Text of the Madhyandina School, Translated*, 1-5. Sacred Books of the East, 12, 26, 41, 43, 44. Oxford.
- Éliade, M. (1965). *The Myth of the Eternal Return, or, Cosmos and History*. Translated by W. R. Trask. Bollingen Series, 46. Princeton, N. J.
- Emeneau, M. B. (1966). "The Dialects of Old Indo-Aryan," In H. Birnbaum and J. Puhvel, eds., *Ancient Indo-European Dialects*, pp. 123-138. Berkeley and Los Angeles.
- Erman, A., and Grapow H., (1926-1931). *Wörterbuch der ägyptischen Sprache*, 1-5. Leipzig.
- Fairservis, W. A., Jr. (1975). *The Roots of Ancient India: The Archaeology of Early Indian Civilization*, 2d ed. Chicago and London.
- Fišer, I. (1966). *Indian Erotics of the Oldest Period*. Acta Universitatis Carolinae, Philologica Monographia, 14. Prague.
- Friedrich, J. (1952). *Hethitisches Wörterbuch*. Heidelberg.
- Gadd, C. J. (1932). "Seals of Ancient Indian Style Found at Ur." *Proceedings of the British Academy*, 18, pp. 191-210, and pls. 1-3.
- Ghirshman, R. (1977). *L'Iran et la migration des Indo-Aryens et Iraniens*. Leiden.
- Glasenapp, H. von (1836). "Die Entstehung des Vajrayāna," *Zeitschrift der deutschen morgenländischen Gesellschaft*, 90 (NF 15), pp. 546-572.
- Gonda, J. (1954). *Aspects of Early Viṣṇuism*. Utrecht.
- _____. (1960). *Die Religionen Indiens, I: Veda und älterer Hinduismus*. Die Religionen der Menschheit, 11. Stuttgart.
- _____. (1965). *Change and Continuity in Indian Religion*. Disputationes Rheno-Trajectinae, 9. The Hague.
- _____. (1970). *Viṣṇuism and Śivaism: A Comparison*. Jordan Lectures in Comparative Religion, 1969. London.
- Hart, G. L., III (1975). *The Poems of Ancient Tamil*. Berkeley, Los Angeles, and London.
- Hauer, J. W. (1927). *Der Vrātya: Untersuchungen über die nicht-brahmanische Religion Altindiens, I*. Stuttgart.
- _____. (1958). *Der Yoga: Ein indischer Weg zum Selbst*. Stuttgart.
- Heesterman, J. C. (1962). "Vrātya and Sacrifice." *Indo-Iranian Journal*, 6:1, pp. 1-37.

- _____. (1964). "Brahmin, Ritual and Renouncer." *Wiener Zeitschrift für die Kunde Süd- und Ostasiens*, 8, pp. 1-31.
- _____. (1967). "The Case of the Severed Head," *Wiener Zeitschrift für die Kunde Süd- und Ostasiens*, 11, pp. 22-43.
- Helck, Wolfgang (1962). *Die Beziehungen Ägyptens zu Vorderasien im 3. und 2. Jahrtausend v. Chr.* Ägyptologische Abhandlungen, 5. Wiesbaden.
- Hickmann, H. (1970). "Die Musik des arabisch-islamischen Bereichs." In H. Hickmann and W. Stauder, eds., *Orientalische Musik*. Handbuch der Orientalistik, 1, Ergänzungsband, 4, pp. 1-134. Leiden and Cologne.
- Hillebrandt, A. (1891-1902). *Vedische mythologie*, 1-3. Breslau.
- Hopkins, E. W. (1915). *Epic Mythology*. Grundriss der indo-arischen Philologie und Altertumskunde, 3:1:B. Strassburg.
- Horsch, P. (1966). *Die vedische Gāthā- und Śloka-Literatur*. Bern.
- Hubert, H., and Mauss, M. (1964 [1898]). *Sacrifice: Its Nature and Functions*. Translated by W. D. Halls. London.
- Johansson, K. F. (1917). *Über die altindische Göttin Dhiṣāṇā und Verwandtes: Beiträge zum Fruchtbarkeitskultus in Indien*. Skrifter utgifna af K. Humanistiska Vetenskaps-Samfundet i Uppsala, 20:1. Uppsala and Leipzig.
- Joki, A. J. (1973). *Uralier und Indogermanen: Die älteren Berührungen zwischen den uralischen und indogermanischen Sprachen*. Mémoires de la Société Finno-Ougrienne, 151. Helsinki.
- Kailasapathy, K. (1968). *Tamil Heroic Poetry*. Oxford.
- Keith, A. B. (1925). *The Religion and Philosophy of the Veda and Upanishads*, 1-2. Harvard Oriental Series, 31-32. Cambridge, Mass.
- Killingley, D. H. (1969). "Retroflexion in Sanskrit," *Proceedings of the First International Conference Seminar of Tamil Studies, Kuala Lumpur, Malaysia, April 1966*, 2, pp. 596-606. Kuala Lumpur.
- Kirfel, W. (1920). *Die Kosmographie der Inder nach den Quellen dargestellt*. Bonn and Leipzig.
- Knorozov, Yu. V. (1968). "The Formal Analysis of the Proto-Indian Texts," In *Proto-Indica*: 1968, pp. 4-19. Moscow.
- Koehler, L., and Baumgartner, W. (1954). *Lexicon in Veteris Testamenti Libros*. Leiden.
- Konow, S. (1926). "Zur Frage nach den Asuras." In *Beiträge zur Literaturwissenschaft und Geistesgeschichte Indiens. Festgabe Hermann Jacobi zum 75. Geburtstag dargestellt*, pp. 259-264. Bonn.
- Koppers, W. (1936). "Pferdeopfer und Pferdekult der Indogermanen: Eine ethnologisch-religionswissenschaftliche Studie." In *Die Indogermanen- und Germanenfrage: Neue Wege zu ihrer Lösung*. Wiener Beiträge zur Kulturgeschichte und Linguistik, Jahrgang 4, pp. 279-411. Salzburg and Leipzig.
- Kosambi, D. D. (1962). *Myth and Reality: Studies in the Formation of Indian Culture*. Bombay.
- Krecher, J. (1969). "Verschlusslaute und Betonung im Sumerischen," In *Lišān mithurti: Festschrift Wolfram Freiherr von Soden zum 19. VI. 1968 gewidmet*, Alter Orient und Altes Testament, 1, pp. 157-197. Neukirchen.
- Kuiper, F.B.J. (1967). "The Genesis of a Linguistic Area." *Indo-Iranian Journal*, 10:2-3, pp. 81-102.
- Law, B.C. (1943). *Tribes in Ancient India*. Bhandarkar Oriental Series, 4. Poona.

- Macdonell, A. A. (1897). *Vedic Mythology*. Grundriss der indo-arischen Philologie und Altertumskunde, 3: 1:A. Strassburg.
- Mackay, E. J. H. (1938). *Further Excavations at Mohenjo-Daro*, 1-2. Delhi.
- _____. (1943). *Chanhü-Daro Excavations, 1935-36*. American Oriental Series, 20. New Haven, Conn.
- Malamoud, C. (1976). "Village et forêt dans l'ideologie de l'Inde brahmanique." *Archives européennes de sociologie*, 17:1, pp. 3-20.
- Marcel-Dubois, C. (1941). *Les instruments de musique de l'Inde ancienne*. Paris.
- Marshall, J. (1931). *Mohenjo-Daro and the Indus Civilization*, 1-3. London.
- Mayrhofer, M. (1956-1976). *Kurzgefasstes etymologisches Wörterbuch des Altindischen*, 1-3. Indogermanische Bibliothek, 2. Reihe. Heidelberg.
- Mode, Heinz (1959). *Das frühe Indien*. Grosse Kulturen der Frühzeit. Stuttgart.
- Oldenberg, H. (1917). "Vedische Untersuchungen, 1: Der geopfert Gott und das Agnicayana," *Nachrichten von der Kgl. Gesellschaft der Wissenschaften zu Göttingen, Philologisch-historische Klasse, aus dem Jahre 1917* (1918), pp. 1-16.
- Parpola, A. (1974). "On the Protohistory of the Indian Languages in the Light of Archaeological, Linguistic and Religious Evidence: An Attempt at Integration," In J. E. van Lohuizen-de Leeuw and J. M. M. Ubaghs, eds., *South Asian Archaeology 1973*, pp. 90-100. Leiden.
- _____. (1975). "Tasks, Methods, and Results in the Study of the Indus Script," *Journal of the Royal Asiatic Society*, 1975: 2 (1976), pp. 178-209.
- _____. (1976). "Interpreting the Indus Script—2," *Studia Orientalia*, 45, pp. 125-160.
- _____. (1977). "Harappan Roots of Ancient Indian Astronomy and Cosmic Speculation." In *Actes du XXIX^e congrès international des orientalistes, Paris, Juillet 1973*, Section organisée par J. Filliozat, Inde ancienne, Vol. 3. Paris. Cf. *XXIX^e congrès international des orientalistes, Résumés des communications, Paris, 1973*, secs. 6-7, p. 76.
- Parpola, S., Parpola, A., and Brunswig, R. H., Jr. (1977). "The Meluhha Village: Evidence for Acculturation of Harappan Traders in Late Third Millennium Mesopotamia?" *Journal of the Economic and Social History of the Orient*, 20: 2, pp. 129-165.
- Piggott, S. (1952). *Prehistoric India to 1000 B.C.* Pelican Books, A205. Harmondsworth, England.
- Rau, W. (1957). *Staat und Gesellschaft in alten Indien nach den Brāhmaṇa-Texten dargestellt*. Wiesbaden.
- _____. (1966). "Fünfzehn Indra-Geschichten übersetzt," *Asiatische Studien*, 20, pp. 72-100.
- _____. (1974). *Metalle und Metallgeräte im vedischen Indien*. Akademie der Wissenschaften und der Literatur, Abhandlungen der geistes- und sozialwissenschaftlichen Klasse, Jg. 1973: 8. Mainz.
- Renou, L. (1953). *Religions of Ancient India*. Jordan Lectures in Comparative Religion, 1. London.
- _____. (1957). *Vedic India*. Translated by P. Spratt. Classical India, 3. Calcutta.
- Rönnow, K. (1927). "Trita Āptya, eine vedische Gottheit, 1. Uppsala Universitets Årsskrift 1927: Filosofi, Språkvetenskap och historiska vetenskaper, 5. Doctoral thesis, Uppsala.
- _____. (1929). "Zur Erklärung des Pravargya, des Agnicayana und der Sautrāmaṇī." *Le Monde Oriental*, 23, pp. 113-173.

- Sachs, C. (1940). *The History of Musical Instruments*. New York.
- Scherer, A. (1953). *Gestirnnamen bei den indogermanischen Völkern*. Indogermanische Bibliothek, 3. Reihe. Heidelberg.
- Schlerath, B. (1968). *Awesta Wörterbuch. Vorarbeiten*, 1-2. Wiesbaden.
- Schulemann, G. (1958). *Geschichte der Dalai-Lamas*. 2nd ed. Leipzig.
- Silva, B. (1955). "Traces of Human Sacrifice in Kanara," *Anthropos*, 50, pp. 577-592.
- Silvi Antonini, C., and Stacul, G., (1972). *The Proto-historic Graveyards of Swāt (Pakistan), Part 1: Description of Graves and Finds*. Istituto Italiano per il Medio ed Estremo Oriente, Centro Studi e Scavi Archeologici in Asia, *Reports and Memoirs*, 7:1. Rome.
- Soden, W. von (1965). *Akkadisches Handwörterbuch*, 1:6. Wiesbaden.
- Southworth, F. C. (1974). "Linguistic Stratigraphy of North India." *International Journal of Dravidian Linguistics*, 3:2, pp. 201-223.
- Stacul, G. (1969). "Excavation near Ghālīgai (1968) and Chronological Sequence of Protohistorical Cultures in Swāt Valley." *East and West*, n.s., 19:1-2, pp. 44-91.
- Steward, J. H. (1955). *Theory of Culture Change: The Methodology of Multilinear Evolution*. Urbana, Ill.
- Stewart, G. W. (1917). "Music (Hebrew)." In J. Hastings, ed., *Encyclopaedia of Religion and Ethics*, 9, pp. 39-43.
- Subrahmanian, N. (1966). *Pre-Pallavan Tamil Index*. Madras University Historical Series, 23. Madras.
- Sullivan, H. P. (1964). "A Re-examination of the Religion of the Indus Civilization," *History of Religions*, 4:1, pp. 115-125.
- Sörensen, S. (1925). *An Index to the Names in the Mahābhārata with Short Explanations and a Concordance to the Bombay and Calcutta Editions and P.C. Roy's Translation*. London.
- Thieme, P. (1938). *Der Fremdling im R̥gveda*. Abhandlungen für die Kunde des Morgenlandes, 23:2. Leipzig.
- Turner, R. L. (1966). *A Comparative Dictionary of the Indo-Aryan Languages*. London.
- Vats, M. S. (1940). *Excavations at Harappa*, 1-2. Delhi.
- Wackernagel, J. (1905). *Altindische Grammatik*, 2:1. Göttingen.
- Wackernagel, J., and Renou, L. (1957). *Altindische Grammatik*. "Introduction générale." Nouvelle édition du texte paru en 1896, au tome I, par L. Renou. Göttingen.
- Walker, B. (1968). *Hindu World: An Encyclopedic Survey of Hinduism*, 1-2. London.
- Weber, A. (1850). "Ueber die Literatur des Sāmaveda," *Indische Studien*, 1, pp. 25-67.
- _____. (1891). "Episches im vedischen Ritual." *Sitzungsberichte der Kgl. Preussischen Akademie der Wissenschaften zu Berlin*, 1891: 2, pp. 769-818.
- Wheeler, M. (1969). *Early India and Pakistan to Ashoka*. Ancient Peoples and Places, 12. London.
- Whitney, W. D. (1905). *Atharva-Veda-Saṁhitā Translated into English with a Critical and Exegetical Commentary*, 1-2. Revised and brought nearer to completion and edited by C. R. Lanman. Harvard Oriental Series, 7-8. Cambridge, Mass.
- Wright, J. C. (1967). "Purūravas and Urvaśī." *Bulletin of the School of Oriental and African Studies*, 30, pp. 526-547.
- Zimmer, H. (1879). *Altindisches Leben. Die Kultur der vedischen Arier, nach den Saṁhitā dargestellt*. Berlin.
- Zvelebil, K. V. (1965). "Harappa and the Dravidians: An Old Mystery in a New Light." *New Orient* 4:3, pp. 65-69.

- _____. (1970). *Comparative Dravidian Phonology*. Janua linguarum, Series Practica, 80. The Hague.
- _____. (1973). "Problèmes fondamentaux de phonologie et morphologie des langues dravidiennes." *Bulletin de l'École Française d'Extrême-Orient*, 60, pp. 1-48.

OTHER FOLK'S FIRE¹

J.C. Heesterman

To the memory of Hertha Krick

AGNI, FIRE, is the central feature of the Vedic world.¹ We hardly need to insist on this point: all of Vedic ritual, centered as it is on the fire cult, is there to prove it. Not surprisingly, then, fire is the focus of a deeply layered, many-faceted imagery. To mention only some prominent points, fire, which prepares man's food and carries offerings to the other world of gods and fathers, is both the center of the human world and the means for communicating with the ultramundane sphere. It is the pivot in the cosmic circulation of the goods of life. For instance, we are told that the ādityas—or the gods in general—went to heaven taking everything with them, including fire; however, when they arrived there they suffered from thirst, for even in heaven they remained dependent on burnt offerings made on earth. Therefore, they had to reestablish fire on earth so as to restore the cosmic circulation whereby they could live in heaven.²

Fire, then, stands for life, wealth, procreation, and the continuation of family, clan, and lineage. Hence the importance that is attached to the installation of the domestic fire and, even more, to that of the separate fire for the solemn sacrifice. One establishes fire, we are told, because one wishes to become rich in cattle, in progeny, and in fiery energy (*tejas*).³ Thus, it stands to reason that the origin of man is mythologically bound up

¹ This essay should have been written in cooperation with Dr. Hertha Krick, whose unpublished thesis, *Das Ritual der Feuergründung* (Vienna, 1972), dealt in an expert way with an important part of the relevant material. Her work emphasizes the originally agonistic nature of the ritual in the context of a communal fire cult. Though very personal, her interpretation is congenial to the approach presented here. Since her untimely death took away the possibility of a joint publication, it is fitting that the present essay should be dedicated to her memory.

I should here also record another debt of gratitude to Mr. Timothy Moody of McMaster University, Hamilton. During a three-month stay at the University of Toronto I had the advantage of working with Mr. Moody on questions relating to his Ph.D. thesis dealing with the Agnyādheya rite. His work offers a different viewpoint. By keeping the ritual system and the ritual symbolism analytically separate, it investigates the ritualists' method of using the available symbolism. Stimulating discussions with Mr. Moody have greatly helped me in the preparation of this essay. His thesis will provide not only full material on the Agnyādheya but new interpretations as well, that will provide a useful contrast to this paper.

² TS 1.5.3.4; MS 1.7.5; KS 9.3.

³ KS 8.8.

with the appearance of fire,⁴ as, for instance, in the Brāhmaṇa versions of the story of the earthling Purūravas and the fleeting nymph Urvaśī, whose son Āyu is an ancestor of both mankind and fire.⁵ Or, in terms of the ritual; "Man is unborn as long as he has not yet established the fire; he is born only when he establishes the fire."⁶ In this way fire even represents immortality. For in the beginning Agni was the only immortal among the gods and their rivals, the asuras, since both were still without an ātman and therefore, as the Śatapatha Brāhmaṇa tells us, subject to death. By toiling and singing Agni's praise the gods finally managed to establish Agni in their inner selves, in their ātman, and so to become immortal, thus defeating their asura rivals.⁷ In the same way the fire cult should ensure man's immortality. The reference to the self is also interesting in another respect. It suggests the identification of man with his fire, as is also clear in the case of Āyu. Indeed, the ritual texts emphasize this identification. Not only are man and fire said to be father and son, but the relationship is reversible.⁸ In short, they are one, a unity that guarantees immortality. Against this background we can understand that the ritualistic concern with the fire borders on the obsessive, as appears from the elaborate casuistry regarding possible mishaps that may befall the sacrificial fire.⁹

However, this obsessive concern seems to point to something else, too. Fire symbolizes life and immortality, but its possession is far from secure. Not only can fire be dangerous and destructive when it gets out of hand and acts in its aggressive Rudra form, it is also notoriously fickle and ephemeral. Indeed, the central theme of the cult and its imagery is not so much the security given by the fire as the fact that it constantly tends to withdraw from men and gods and to go into hiding in the waters, plants, or other elements, whereupon it must be found and taken possession of again.¹⁰ Paradoxically, the fire, though representing continuity and immortality, is said to become "worn out" (*jīryati*)¹¹ and to fear death. Agni's fear of death is the theme of the story of his three predecessors, or elder brothers, who had succumbed or disappeared under the weight of their sacrificial function.¹²

⁴ A. Kuhn, *Die Herabkunft des Feuers und des Göttertranks* (reprint ed., Darmstadt, 1968), pp. 64–84.

⁵ MS 1.6.12; KS 8.10; ŚB 11.5.1; BŚS 18.44–45.

⁶ MS 1.6.4.

⁷ ŚB 2.2.2.8–14; cf. also 10.4.1.6.

⁸ ŚB 2.3.3.6.

⁹ See, for instance, the reparatory rites in ĀpŚS, which include the rather far-fetched case that the fires might go out even though there be no wind (9.10.6). This case may originally have had another meaning in the "preclassical" phase of the ritual's development.

¹⁰ See, for instance, RV 10.51, esp. 2–5.

¹¹ TS 1.5.7.3; MS 1.5.6; KS 7.4.

¹² See verses referred to in note 10; and also TS 2.6.6.1–2, 6.2.8.4–6; MS 3.8.6; KS 25.7; ŚB 1.2.3.1, 1.3.3.13–17.

The present Agni, the fourth in succession, is afraid that the same lot will befall him, and he flees to take refuge in the waters. The gods finally find him and lure him back into sacrificial service by promising him a share in the sacrifice and immortality. (This is in striking contrast to Agni's immortality elsewhere, as noted above).

In a similar vein we are told about the three bodies or forms (*tanū*) of Agni, dispersed throughout the universe in the guise of cattle, water, and sun. These bodies have to be brought together and reintegrated, as is ritually done by means of the so-called *tanūhavīṃṣi*, the "body-offerings" to Agni, once the fires have been set up at the Agnyādheya rite.¹³ This can also be done by assembling the different kinds of earth that are used in making the fire hearths—a procedure that is closely parallel to assembling the loam for baking firepots and bricks in the Cayana ritual, that is, reassembling Agni *purīṣya*—and by collecting different kinds of firewood. So Agni continually disintegrates or disappears and must be found, collected, and reintegrated again and again.

Thus we find that it is not sufficient to establish the fires once and for all at the Agnyādheya rite; there is in addition a repeated setting up of the fires (Punarādheya), and we even find a third setting up mentioned.¹⁴ Even the prestigious brick altar does not provide permanence. On the contrary, the altar is abandoned, never to be used again. After its use in the Soma ritual it is considered a cadaver, Agni's dead body, as I was told by certain Nambudiris.¹⁵ Here, too, the basic pattern is one of cyclically alternating phases, periodical disappearance or dissolution and even death, followed by reassembling and resuscitation of the fire through the action of man or of his predecessors, the gods. There is thus no security for man in the fire, nor is the fire comfortable with man. And yet they need each other for the common goal of continuity and immortality: man needs the fire in order to keep up the circulation of the goods of life, and the fire needs man in order to be resuscitated again and again. But far from there being from the start an absolute and unshakable identity of man and fire, the weight of cult and mythology goes to show that at best the relationship is one of compromise and mutual manipulation.

The myth of the fire's descent, then, does not only tell us how in the beginning the fire came to be established among men on earth. Equally and more importantly, it tells us about the nature of the fire and its dubious relationship to man. For instance, at the churning of the fire the myth of Purūravas and Urvaśi and of their son Āyu is referred to in the simple mantra addressed to the fire drill: "You are Urvaśi, you are Āyu, you are Purūravas."¹⁶ This is intentionally made to seem a confident recall of mythical times

¹³ TB 1.1.6.1–3; MS 1.6.8; KS 8.8–9; ŚB 2.2.1.13–15.

¹⁴ TS 1.5.4.4; ĀpŚS 5.29.11.

¹⁵ For the brick altar and death, see TS 5.4.4.4.

¹⁶ TS 1.3.7k; ĀpŚS 7.12.13–14.

by way of an unproblematic reenacting of a previous founding act. But at the same time this simple, straightforward mantra conjures up the mythical story that turns on the unstable and ephemeral relationship of the two unequal partners, Purūravas and Urvaśi, the uncertainty of life's continuity, and the problem of obtaining and holding the fire—a problem for which the story of the two partners provides the paradigm. Thus in this story the lightning, the heavenly fire, is not only a sign of Purūravas' virile prowess.¹⁷ It is equally his undoing as it shows him (in violation of the critical condition of their covenant) naked before Urvaśi, who then disappears.

The fire, then, presents a paradox. It holds out the promise of continuity and immortality, but at the same time it is characterized by instability and an unaccountable lack of security. This is the problem that the ritual must attack: how to devise a ritual means to obtain and to hold the fire securely so that it will work uninterruptedly for the maintenance and continuity of life. This problem, it would seem, was both the stimulus and the nodal point of the elaboration of the fire ritual. The ritualist had to start by acknowledging the truth of the mythological paradox and, taking his cue from there, then had to devise a means to break away from the paradoxical tie. One must remember that, given the nature of the fire as expounded in mythical lore, it is not in man's or, in ritual terms, in the householder's (*grhastha*) possession from the beginning. The fire is always elsewhere, i.e., with someone else, with the "others," whence it must be obtained by any means, fair or foul. And, as well shall see, the means used are usually foul. Mythology teaches that man did not obtain the fire in any regular or natural way, but by irregular or violent means, notably by theft. In Greek mythology, and equally in its ancient Indian counterpart, fire had to be stolen from heaven, as has been shown by Johanna Narten in her study of the double root *math*: *mānthati*, the laborious but harmless act of churning, notably the fire by means of the fire drill, and *mathnāti*, to rob, steal.¹⁸

In order to see how the problem presented itself to the ritualists we may turn to the ritual instructions for obtaining the fire. The primary fire is, of course, the home or *aupāsana* fire, the focus of the household and its cult, from which the fires for the solemn or *śrauta* cult are derived. The most frequently mentioned method of obtaining and setting up the home fire is marriage, the home fire being originally used at the marriage ceremony (*vaivāhikāgni*).¹⁹ However, the marriage ceremony takes place in the parental

¹⁷ RV 10.95.3: *avīre krātau vī davidyutan nā* "without virile power there is no lightning."

¹⁸ Johanna Narten, "Das Vedische Verbum *math*," *Indo-Iranian Journal*, 4 (1960), pp. 121–135.

¹⁹ ŚGS 1.1.3; ĀśvGS 1.9.1; PārGS 1.2.1; KhādGS 1.5.1; GobhGS 1.1.8; HirGS 1.22.2; ĀpGS 5.13. Thus we can understand that, according to some authorities, the domestic Agnihotra offering can be performed by the sacrificer's wife (KhādGS 1.5.17), and that the *śrauta* ritual generally requires that the sacrificer should have a *patni*

home of the bride, and so one derives one's home fire from one's in-laws. It thus looks as if the fire is transmitted in the female line or, in the case of regularly repeated matrilineal cross-cousin marriage, from one's mother's family. This is also in keeping with the Brāhmaṇa versions of the story of Purūravas and Urvaśī, since the fire, both as lightning and as contained in the aśvattha wood of the fire drill, is linked with or comes from Urvaśī's relatives, the Gandharvas.²⁰ There is, however, a practical problem. Obtaining the home fire from the marriage ceremony implies that one sets up a separate household with one's own domestic cult. But this is not always the case; the new couple may, and in many cases will, start off by living in the household of the groom's father as full participants in the paternal domestic cult. The R̥gvedic dialogue of Purūravas and Urvaśī suggests that this was also their case. If the newlyweds do not set up a separate household, there is no occasion—not even the jural possibility—for maintaining one's own home fire. Consequently, other ways are mentioned. One may derive one's fire from that of the teacher at the time that one leaves the preceptor's home to set up one's own household.²¹ Since this is the moment when the onetime pupil becomes householder, this method of obtaining one's fire is parallel to that of the marriage fire, and so we run up against the same problem. But there are still other alternatives. One may also obtain one's fire from the house of a cattle-rich vaiśya (*purupaśu-viṣkula*), a munificent sacrificer, or a śrotriya. Or it may be obtained from a frying pan (*ambariṣa*), presumably by heating a pan filled with combustible material in another unspecified fire.²²

We may retain two essential points from this somewhat confusing list of possible sources. The first is that these alternatives all have one feature

however restricted her role may be. On the other hand, there is the stress on the male line in the mantras for worshipping the fires after the Agnihotra: "May [name of sacrificer's son] continue this work of mine."

²⁰ See references in note 5. MS, KS, and ŚB stress the relationship with the Gandharvas. According to Baudhāyana, however, the aśvattha wood of the upper drilling stick grew out of Purūravas's seed, which Urvaśī put in a pot, the latter becoming the śamī that provides the lower araṇi. Here, then, it would seem that the fire's connection with the male line is emphasized.

²¹ Leaving the teacher's home is the occasion of the Samāvartana ritual. However, this ritual does not specifically refer to the pupil obtaining his fire from the teacher's hearth. In fact, it would seem that the Samāvartana originally had a different meaning, namely, the setting out of the consecrated warrior on a tour of conquest and of prize- or booty-winning. As we shall see, this is in itself not an improbable context for obtaining one's fire. On the Samāvartana, see Heesterman, "The Return of the Veda Scholar," in *Festschrift F.B.J. Kuiper* (The Hague, 1968), pp. 436–447. I avail myself of this opportunity to correct an irritating mistake on p. 445 of my rendering of ŚB 11.4.1: it is not that Svaidāyana is outwitted by Uddālāka, with whom he eventually seeks upanayana, but the other way around.

²² ŚGS 1.1.8; PārGS 1.2.3; KhādGS 1.5.4–5; HirGS 1.22.4 (cf. 1.26.15); ĀpGS 5.16.

in common: the fire has to be procured from elsewhere, or rather from someone else, whose willing or unwilling cooperation is therefore necessary. And, strangely, it is nowhere said that one should take one's fire from one's father's fire, let alone that one should continue maintaining one's paternal or ancestral fire. In fact, there does not seem to be such a thing as an ancestral fire, because the fire ends with the life of the householder and is last used in his cremation. After that his son has to set up his own fire. If relatives are involved they are not the patrilineal but, as we saw, the matrilineal relatives. This is surprising, for it sits uncomfortably with the strong brahmanical stress on the patrilineage and, more specifically, with the otherwise emphasized double identification of the householder with his son and with his fire. One would have expected the son to maintain his father's fire so as to ensure the continuity of the lineage as well as the immortality of his father and earlier patrilineal ancestors. However, this is clearly excluded. Here, in ritual terms, we encounter the paradox we already noticed, namely, that of permanence and instability, continuity and discontinuity.

The second point that emerges is that no use is made of the fire drill, an instrument otherwise much in evidence. Technically, it is, of course, quite possible to obtain one's fire without having to turn to other people, namely by churning one's own by means of the fire drill. However, the fire drill is only used in exceptional circumstances, namely, when the fire obtained through marriage inadvertently goes out and must be replaced.²³ So preference is clearly given to the fire of others. Perhaps this is not so surprising after all, if we take into account that the fire is not only the focus of the limited household, but equally of the web of social relationships in the wider community. This is illustrated, for instance, by the fact that at festive occasions the fire provides the food for both human and divine guests. Moreover, the texts mention, as one of the fires in the śrauta ritual, the fire in the assembly hall, the sabhā, even though after its solemn installation we do not hear any more about it.²⁴ But the difficulty lies exactly in this social or communal function of the fire, and that may well be the reason why we do not learn more about the assembly hall fire than that it is solemnly installed. The difficulty is that the fire is the householder's intensely personal property or even his own self. At the same time, however, it is communal, tying the householder in with his fellows and making him dependent on them. This seems to be the social reality behind the mythological notion of the fire's peripatetic impermanence. The ritual expresses this in the rules that command the householder to obtain his fire from others.

At this point we should turn our attention to the fires for the śrauta

²³ HirGS 1.22.4; ĀpGS 5.15.

²⁴ According to BŚS 20.17:37.15–17, the sabhya as well as the āvasathya fire (of which there is no further mention) are used in the manner of a grhya fire, namely, for the preparation and offering of a sthālipāka.

ritual, which form in a complicated way the extension of the domestic fire. Of prime importance for our purpose is, of course, the ritual for setting up the śrauta fires (Agnyādheya). The outline of the procedure is the following. On a special fire taken from the domestic hearth a rice stew is prepared, the brahmaudana. This odana is offered to and eaten by four brahmins—the officiants—while the remainder of the odana is stirred with three pieces of wood that are then put as fuel into the fire over which the stew was prepared. This fire is kept burning throughout the night until the following morning, when it is allowed to go out.²⁵ So this fire, however sacred it may seem on account of the cooking of the brahmaudana, is not used directly for setting up the śrauta fires. The only link is an indirect one: before the brahmaudana fire is allowed to go out, the fire drill is warmed over it so that the brahmaudana fire is symbolically transferred to the two araṇis that form the fire drill. Here, then, the fire drill comes into its own. The first of the śrauta fires, the gārhapatya fire, is then produced by churning at the site of the now extinguished brahmaudana fire and is then brought to the gārhapatya hearth, which is to the east. Curiously, the gārhapatya fire, notwithstanding its name (which pertains to the gr̥hapati, the householder), is not directly linked with the domestic fire. Between the gr̥hya and śrauta fires there is a gap that is bridged by interposing the fire drill.²⁶

Once the gārhapatya fire, on which the offerings for the gods are prepared, is on its hearth, the āhavanīya or offering fire can readily be established by taking it from the gārhapatya. Here the fire drill is no longer necessary. And, indeed, apart from the critical phase of establishing the gārhapatya fire, the drill seems strangely supernumerary. Its further use seems to be either in case of mishaps, as for instance when all the fires, including the gārhapatya, have gone out; or, rather superfluously as it would seem, in the animal and Soma sacrifices when fire is churned and added to the already burning āhavanīya at the moment the victim is brought forward. We cannot here pursue these somewhat puzzling situations. For the moment it may suffice to conclude that the ritual use of the drill does not appear to be based on its obvious technical advantages. This situation is comparable to the very restricted use of the churning sticks in the domestic ritual, where we noticed a distinct preference for other's fire. This preference also appears in the case of the third of the śrauta fires, to which we shall now turn.

Apart from gārhapatya and āhavanīya there is the southern fire, or

²⁵ Cf. ĀpŚS 5.4.1.2–7.3, 8.5–9.1, 10.7–11.6.

²⁶ I have followed here ĀpŚS. BŚS, however, does not derive the brahmaudana fire from the domestic fire but takes for the purpose an ambariṣa or uttapanīya fire, that is, one indirectly kindled at another fire by means of a frying pan or similar device. Possibly this was originally meant to be done stealthily, for Baudhāyana prescribes that they should go to the place where they take this indirectly kindled fire “covered” (*sampracchannāḥ*). At any rate in Baudhāyana there is no link whatsoever with the domestic fire (BŚS 2.13:54.15).

dakṣiṇāgni. In many respects this fire stands in opposition to the others. In contradistinction to the gārhapatya and āhavanīya, which are situated on a line running from west to east, the heaven-going direction, the dakṣiṇāgni is placed to the south. It marks the north-south direction that is concerned with the fathers, i.e., predominantly with men.²⁷ This southern fire, according to its function also known as anvāhāryapacana or odanapacana—that is, the cooking fire for the food offered to the brahmins at the sacrifice—is very much akin to, if not a double of, the domestic and brahmaudana fires.²⁸ It is therefore not only installed by a different priest, the āgnidhra (the adh-varyu deals with the gārhapatya and āhavanīya), it is also procured in a different way. There is, of course, the possibility of taking it, like the āhavanīya, from the gārhapatya hearth,²⁹ but this is only given as an alternative and clearly represents an attempt to eliminate the opposition and to amalgamate the śrauta fires into a homogeneous group, as against the domestic fire.³⁰ However, the evidence is overwhelming for setting the dakṣiṇāgni apart from the other śrauta fires. Thus the brahmaudana fire, instead of being allowed to go out, may, according to some authorities, be preserved and used again for the dakṣiṇāgni.³¹ In view of their similarity in function—both being used for preparing the food for the brahmin guests and officiants—this procedure is readily understandable. At any rate it clearly sets off the dakṣiṇāgni from the other śrauta fires. Or again, the dakṣiṇāgni may be kindled by churning with the fire drill.³² But the southern fire is preferably to be taken from elsewhere—a burning tree top, for example, apparently one hit by lightning.³³ Mythologically this makes perfect sense, but as a ritual prescription it does not seem to be overly practical. So one is back again at the point where, as was the case with the domestic fire, one obtains the dakṣiṇāgni from someone else, namely from an opulent householder, whether brahmin, kṣatriya, vaiśya or even śūdra. But here we are in for a surprise; not only should this householder be opulent, but he should also be “like an asura,” or counter-god (*asura iva*).³⁴ This is indeed at first sight puzzling, but it can be linked up with other statements. Thus, in the same

²⁷ For the opposition west-east as against south-north, cf. ŚB 4.6.8.19–20.

²⁸ Interestingly, the hall for the brahmaudana fire is oriented south-north (ĀpŚS 5.4.1).

²⁹ BŚS 2.17:61.18.

³⁰ BŚS 2.17:61.18 goes to some length to justify the alternative by referring to the unitary sacrificial god Prajāpati. ŚB, which is most systematic in unifying the ritual and eliminating all oppositions, is clearly embarrassed by the southern fire and recommends its kindling only when actually necessary for cooking the food for brahmins at the Full Moon and New Moon sacrifices (ŚB 2.3.2.6–8).

³¹ BŚS 2.16:58.17, 2.18:61.10 Cf. also ŚB 2.1.4.6.

³² ĀpŚS 5.13.8.

³³ ĀpŚS 5.14.3 (cf. KS 29.10). Probably this is a reference to the Purūravas story, where Purūravas finds the fire given to him by the Gandharvas in a burning aśvattha top (KS 8.10).

³⁴ ĀpŚS 5.14.1–2; KS 8.12.

vein we learn that the dakṣiṇāgni belongs to the rival (*bhrātrvyadevatya*), in contradistinction to the gārhapatya, which belongs to the sacrificer (*yajamānadevatya*).³⁵ In a comparable case—namely, that of the fire that the sacrificer must carry for a year in preparation for the building of the brick altar (the ukhya fire)—it is said that if the adhvaryu officiant wants to raise an enemy against his patron, he should get the ukhya fire from someone else's place.³⁶ So we can hardly doubt the seriousness of the statement that the dakṣiṇāgni should be taken not only from someone else but from an enemy.

The ritual, although it offers hardly any scope for inimical or antagonistic proceedings, is indeed shot through with the idea of conflict and blood-letting. In the Brāhmaṇa explanations Indra is forever killing Vṛtra, while references to the battles between devas and asuras abound to such an extent that one is inclined simply to discount them as hyperbole, the more so since there is very little in the actual ritual that directly reflects such war-like exploits. But here the ritual itself gives a direct indication of inimical proceedings, for if the householder from whom one should take one's southern fire is indeed "like an asura," it is unlikely that he will be prepared to lend his fire to the service of the devas without putting up some resistance. Of course, the ritual as we know it does not elaborate this point, and indeed does not offer any room for such elaboration, but the statement is the more telling for it. If the ritual is at variance with the ritual system as propounded by the texts, we must assume that the variance indicates a previous state of affairs that was so strongly embedded that the standardized system of ritual could not totally ignore it. This adds a further dimension to the problem that confronted the ritualists; not only was the fire impermanent and regularly obtained elsewhere, but obtaining it also meant conflict and strife. Therefore, we should investigate how this conflict manifested itself in connection with sacrificial fire.

The mythological prototype of conflict is the perennial war of devas and asuras, of gods and counter-gods. The asuras are not demons in our sense, but rather lordly if dull-witted warriors and sacrificers who are continually outwitted in sacrificial contests by the devas. Also, in later purāṇic mythology, the champion of the gods, Viṣṇu, assumes the guise of a dwarfish brahmin to trick the munificent sacrificer and king of the asuras, Bali, into ceding the whole of the triple world. Significantly, this episode occurs at a sacrifice arranged by the liberal but overbearing asura king. In the Vedic texts, as well, the battles between asuras and devas are often said to take place in a sacrificial context. The site of the sacrifice seems to be a battlefield rather than a tidy and peaceful place.

³⁵ ŚB 2.3.2.6; the same is true for dakṣiṇāgni and āhavanīya (TB 1.6.5.4).

³⁶ ĀpŚS 16.9.7.

If we now look again at the rite for establishing the śrauta fires, we can easily perceive further remnants of battles and contests. In the first place we notice that a horse, apparently without any special function, should stand nearby when the fire is drilled for the gārhapatya. Later on this horse accompanies the fire that is brought from the gārhapatya eastwards to the āhavanīya hearth. The significance of the horse's presence becomes somewhat clearer when we learn that on the arrival at the site of the āhavanīya, the horse is made to step on the site while the mantra "He has overcome all foes" is being recited.³⁷ Moreover, to the south of the fires' emplacement a wheel or a chariot is rolled from the west to the east when the fire is brought forward.³⁸ One text combines these three elements—fire, horse, and chariot—and has the fire transported on the chariot and the chariot drawn by the horse.³⁹ At first one will be inclined to think of a harmless piece of solar symbolism, even though this episode is said to be intended to smash a non-specified and absent enemy.⁴⁰ However, if we combine this episode with other features of the same rite, it no longer appears so serene. We find, in fact, that it is expressly forbidden to anyone to cross the west-east line between the burning gārhapatya and āhavanīya fires—that is, in a south-north direction. A guardian (*goptr*) is even appointed at the time to guard against such an eventuality.⁴¹ However unlikely the event, there is nevertheless a reparatory rite in case not just a harmless person but a chariot or a cart or somebody carrying his fires passes between the burning gārhapatya and āhavanīya fires.⁴² Such an occurrence, however, can hardly be just a mishap. It must be intentional. The explanation emerges when we read in another context that the gods were attacked at their place of sacrifice by the asuras from the south and had to retreat to the āgnīdhriya hearth on the north side of the extended place of sacrifice, where they held out and finally overcame the asura attackers.⁴³ We are now in a position to understand why the southern fire is derived from someone who is "like an asura," and why it is said that it belongs to the enemy. Originally the place of sacrifice was a fighting ground, and not only in symbolic mythological terms. Its diagram is made up of two perpendicular lines running west-east and south-north representing the movement of two opposing parties; here one fought for one another's fire, food, and cattle. Such fights may have been prearranged, ceremonial, and conventional, but they were no less violent because of it. Incidentally, this may also explain why one who removes the fire is guilty

³⁷ ĀpŚS 5.10.9, 14.5.14–18; TS 4.2.8a (mantra).

³⁸ ĀpŚS 5.14.6–7.

³⁹ VaitŚS 5.18.

⁴⁰ See W. Caland on ĀpŚS 5.14.7; and *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, 53, p. 699.

⁴¹ BŚS 2.16:60.1–3.

⁴² ĀpŚS 9.10.17; MS 1.8.9.

⁴³ TS 6.3.1.1; ŚB 3.6.1.26–28.

of manslaughter (*virahan*).⁴⁴ The ritual texts explain this "manslaughter" as removing one's own fire from its hearth, but given the fact that one had to obtain or win the fire from someone else, it does not seem improbable that this symbolic manslaughter was originally connected with violent scenes at the sacred hearths.

In the "preclassical" background of the śrauta ritual the mythological paradox of the fire's instability and impermanence found its explanation in the actual struggle for life—always uncertain in its outcome—which was ceremonially enacted by opposing parties at the place of sacrifice. Here the fire is not merely a symbolic rallying point, like a flag or standard. In a very direct and concrete sense it gives and sustains life in its capacity as the cooking fire that converts dead or killed matter into life-sustaining food. It does not seem to be accidental that both the violent strife and the sustenance of life emerge most clearly at the southern fire, which is the cooking fire par excellence. It is significant that, in contrast to the two other fires, the dakṣiṇāgni is associated with both the domestic fire and with others' fires. The meaning is, quite simply, that for the business of life one needs the others. But this also entails strife and conflict in a world of scarcity. The cooperation needed to keep life going is not without disruptive tensions, and it is far from being always willingly given. Thus the social aspect of the fire is inextricably bound up with strife and violence. The mythological motif of the fire's impermanence reflects its social function: fire as the guarantor of life is by that very token subject to the vicissitudes of the struggle for life. We should therefore pursue the matter of the fire's social function a little further.

The social function of the fire becomes clear in the ritual of preparing the rice stew, or odana, offered to the brahmins. The relevant point is that this brahmaudana—or any odana—is prepared and eaten by four persons, who are obviously four brahmins in the context of the ritual.⁴⁵ The number four characterizes the social world as a whole, as is illustrated by the four persons administering the unction at the Rājāsūya, the four players in the dicing episodes of the Rājāsūya and Agnyādheya,⁴⁶ the four varṇas, the four directions, and so on. Also, the rule that one who studies the caturhotṛ formulas should not eat in a company of four for a year shows that the number four stands for the community: during this year the caturhotṛ student should remain outside the community.⁴⁷ As the odana is presented in the texts, it is an unassuming vegetarian affair. However, a divergent opinion

⁴⁴ TS 1.5.2.1; KS 8.15, 9.1; MS 1.7.3–5; KB 1.3–5.

⁴⁵ On the odana and its being eaten by four persons, see J. Gonda, *The Savayajñas* (Amsterdam, 1965), pp. 52–59.

⁴⁶ Heesterman, *The Ancient Indian Royal Consecration* (The Hague, 1957), pp. 114ff., 143ff.

⁴⁷ ĀpŚS 14.13.1; MS 1.9.7. For the number four as defining the smallest number of monks forming a saṅgha, see H. Bechert, "Aśoka's Schismenedikt," *Wiener Zeitschrift für die Kunde Süd- und Ostasiens*, 5 (1961), esp. pp. 30ff.

according to which a cow should also be killed, prepared, and eaten at the time of the Agnyādheya's brahmaudana is also on record. One authority is even of the opinion that not one, but many cows should be so used, because this gives the sacrificer meritorious fame (*punyā praśamsā*).⁴⁸ Here the odana ceremony reveals itself as a prestigious communal affair. As we have come to expect, the element of competition and rivalry is not absent. Apart from the brahmaudana on the previous day, there is a second odana that is connected with or replaces the killing, preparing, and eating of a cow. Four participants including the sacrificer (again the significant number) have a dicing contest for the parts of a cow, which may be replaced with the odana.⁴⁹ So we may assume that the odana ceremony was originally quite different and far more elaborate—as regards the ceremony itself and the social participation—than the simple and innocent-seeming porridge offered to four brahmins. Against this background we may understand why the Atharvaveda calls the odana a means for conquering one's foes,⁵⁰ and why it elsewhere states that the fire has come into existence for the display of great heroism, although it adds in the same breath that it is for cooking the brahmaudana.⁵¹ In other words, the odana combines all the elements of abundant food and of rivalry, elements that characterize the potlatch.

The odana, then, seems to be the central feature of the Agnyādheya, far more so than the series of standard iṣṭis—for Agni, for the three forms or tanūs of Agni (*pavamāna*, *pāvaka*, *śuci*), for Indra-and-Agni, and for Aditi—that should follow the establishing of the fires. As the Atharvaveda tells us, the fire was established for cooking the odana, and it is in the odana ceremony that the fire's meaning and purpose become manifest. The odana is not simply a preliminary rite on the day preceding the installation of the fires. It recurs in a different form, which includes the gift of a cow and the gambling with dice, as we have seen, on the main day when the fires are established. It even recurs a third time in the form of the Aditīcaru—a porridge in no way different from the odana—that forms the last of the iṣṭi series after the ādhāna. This caru is typically given to and eaten by four brahmins, and a cow is added as dakṣiṇā.⁵² Moreover, Aditi has a special relationship with the odana, having given birth to the Ādityas as a result of eating the remainder of an odana.⁵³ The importance of the odana cannot be doubted, but is this sufficient to explain why it recurs so often?

Not only in the Agnyādheya but also in other rituals we find repeated

⁴⁸ BŚS 2.15:57.13.

⁴⁹ ĀpŚS 5.19.2–20.3; BŚS (2.8:46.16, 2.9:48.4) has the dicing for the cow on the previous days where the others have the brahmaudana ceremony.

⁵⁰ AV 4.35.7.

⁵¹ AV 11.1.3.

⁵² ĀpŚS 5.22.3–5.

⁵³ TS 1.1.9; MS 1.6.12; KS 7.15.

odanas. Thus we find the odana prescribed both at the beginning and at the end of the horse sacrifice. At its end there are even twelve odanas on consecutive days.⁵⁴ In other words, the odana marks the opposite ends of a cycle. The interesting point is that the first odana, at the beginning of the horse sacrifice, precedes the year-long conquering procession of the sacrificial horse and the accompanying warriors. It is even said that by means of the odana ceremony the sacrificer obtains the right to plunder brahmins during the year-long procession—namely, those brahmins who, when challenged with questions about the Aśvamedha, do not answer adequately and so lose out.⁵⁵ When we now look again at the Agnyādheya, it is striking that there also we find a year-long interval after the brahmaudana and the setting up of the fires; only after this interval is the first sacrifice performed, either as the already mentioned series of iṣṭis concluded by the Aditi caru or as an animal or Soma sacrifice.⁵⁶ There can also be a year's interval before the setting up of the fires, that is, between the installation of the brahmaudana fire and the brahmaudana ceremony proper. In that case the brahmaudana ceremony is repeated at the end of the year's interval.⁵⁷ Obviously these year-long intervals can be reduced to shorter periods (twelve days, for instance) that can symbolically equal a year. But the point is that in place of a single brahmaudana ceremony and the establishment of the śrauta fires performed once and for all, we now can see the procedure as a concatenation of year-long cycles (or their symbolic equivalents) punctuated by odana ceremonies. In fact, this pattern of cyclical repetition was already apparent when we observed that the whole of the Agnyādheya, not just the odana, is liable to be repeated in the Punarādheya and even in a third ādhāna. It is hardly likely that these repeated ādhāna ceremonies would be necessitated by mishaps or lack of success, as the usual explanation goes.⁵⁸ In such cases a simple reparation rite would seem to be the answer, rather than the elaborate length of abolishing the old fires and establishing new ones. Clearly these repeated ādhānas originated from a cyclical pattern.

The cyclical pattern can be recognized as a general characteristic of the original śrauta ritual. It was already to be seen in the year-long conquering and looting expedition of the Aśvamedha, preceded by an odana ceremony (as well as by animal and vegetal sacrifices) and closed by the horse sacrifice proper, after which other ceremonies follow, including a twelve-day period with an equal number of brahmaudanas. Furthermore, in the elaborate ritual for the construction of the brick altar (cayana), we notice that the first stage of

⁵⁴ ĀpŚS 20.2.4–6, 23.8–9.

⁵⁵ BŚS 15.3:206.16; ĀpŚS 20.5.15–16.

⁵⁶ ĀpŚS 5.21.2–6; MS 1.6.11.

⁵⁷ ĀpŚS 5.7.11–15.

⁵⁸ ĀpŚS 5.26.3.

the ritual is an expedition to obtain the clay for bricks and the fire pot. Incidentally, since this clay is considered to be a form of (the dispersed) Agni, the expedition is all but tantamount to winning the fire—other folk's fire, that is. This expedition can be shown to have been originally a razzia, or even a head-hunting campaign to provide the human head that is to be put in the center of the altar's foundation.⁵⁹ Then an animal sacrifice is performed, after which the sacrificer should carry the fire pot (ukhā) for the period of a year—apparently during a further expedition—before the brick altar is finally built and a Soma sacrifice performed.⁶⁰ At the end we again find an odana ceremony.⁶¹ In the Rājasūya such cycles can also be recognized, all with warlike expeditions during the intervals.⁶² Even in the standard form of the Soma ritual, the Agniṣṭoma, this pattern is still discernible, though in a muted form, the setting out on a chariot of the consecrated sacrificer-to-be (*dikṣita*) with his fires (or rather his fire drill), toward the eventual place of sacrifice. This setting out can be easily linked with the sanīyācana, the collecting of goods for the sacrifice, which takes place at the same time. Although it is only briefly mentioned and is reduced to an innocuous begging rite, we need not be taken in by appearances.⁶³ The *dikṣita*'s journey does not seem to be just a solemn but harmless procession. Similarly, the bringing forward of the fire to the new āhavanīya on the extended place of sacrifice seems very much a compressed, telescoped version of such conquering or booty-winning expeditions, the accompanying mantras containing references to conquest and booty.⁶⁴

It may be objected that although the Agnyādheya does exhibit these cyclical intervals, they are not necessarily connected with expeditions, let alone warlike ones. There is, indeed, an explicit rule stating that in the interval between the brahmaudana and the Agnyādheya proper the sacrificer should not set out on any journey, nor should the brahmaudana fire be allowed to go out during this time. However, it is further stated that, if the sacrificer should set out and allow the fire to go out—the two cases being very much the same, since the sacrificer would take the fire with him not in live form but in the fire drill, or symbolically in himself—he should simply perform the odana ceremony again.⁶⁵

⁵⁹ Heesterman, "The Case of the Severed Head," *Wiener Zeitschrift für die Kunde Süd- und Ostasiens*, 11 (1967), pp. 22–43.

⁶⁰ ĀpŚS 16.9.1; that it was indeed originally an expedition is apparent from ŚB 6.8.1.1–4.

⁶¹ ĀpŚS 17.17.10.

⁶² Heesterman, *The Ancient Indian Royal Consecration* (The Hague, 1957), esp. chap. 21 (*samsrpa-offerings*) and chap. 26 (*prayujāṃ havīṃṣi*); Heesterman, "The Conundrum of the King's Authority," in J. S. Richards, *Authority and Kingship in South Asia* (Madison, Wisc., 1978).

⁶³ ĀpŚS 10.18.5–19.5.

⁶⁴ TS 1.3.4c.; on the Agniṣṭoma, see W. Caland and V. Henry, *L'Agniṣṭoma* (Paris, 1906), §106 and Volume I, page 590.

⁶⁵ ĀpŚS 5.7.7–12.

So although the sūtras seem to prefer a closely fitted, straight succession of ritual acts without intervals, much less journeys, we are in fact back again to the cyclical pattern of odana-interval-odana, as is the case with the Agnyādheya followed after an interval by the Punarādheya. These cyclical yearly intervals connected with the Agnyādheya do not themselves display traces of conflict and violence, but they do fall into the same pattern shown by other rituals, and so the original nature of these intervals can reasonably be inferred, the more so since we already saw that the fire and its establishment were the focus of agonistic proceedings.⁶⁶ Moreover, even though the intervals seem to be given over to perfectly serene observances, their mythological explanations are replete with conflict and violence. This comes out clearly in the explanation of the Punarādheya.⁶⁷ There it is said that the gods, before they set out to do battle with the asuras, deposited their tanūs, their respective selves or essences, with Agni, in the fire—as, indeed, the sacrificer who sets out on a journey is supposed to do according to the mantras for such an occasion.⁶⁸ After their victory they came back, took up their deposited tanūs, and established their fires again. Incidentally, the fire seems here very much to be the form of the precious essence or self, which is not surprising in view of the tendency to identify the sacrificer with his fire. The same explanation is given for the interval between the Agnyādheya proper and the tanūhavīmṣi offerings. Here again the gods deposit their precious selves in the fire, go out, beat the asuras, and come back to take up their deposited selves again. The tanūhavīmṣi, then, are the price they have to pay to Agni to get back their selves.⁶⁹

Translated into the terms of the ritual, there appears to be a cycle starting at one end with a fire sacrifice involving possessions—in other words, a grandiose distribution of goods. Then one goes out on a conquering and booty-winning expedition. During this period the fire is inactive in that one does not arrange for large sacrificial distribution ceremonies such as the brahmaudana ceremony, although one may visit other people's sacrificial distributions in hopes of winning at least part of the goods put up as prizes. The inactivity of one's fire during this period is also expressed in the mythological theme of Agni's disintegration or dispersion: Agni, being unable to carry the load of the gods' selves, divided them—or rather divided himself, for the gods' selves were their fires—among the animals, the waters, and the sun.⁷⁰ This dispersion tallies with the sacrificial distribution of goods by the sacrificer before his setting out for the interval period.

⁶⁶ Only the gataśrī, the man of apparently permanent fortune, has the duty to keep his śrauta fires continually burning.

⁶⁷ TS 1.5.1.1; MS 1.7.2; KS 8.15; ŚB 2.2.3.2.

⁶⁸ ĀpŚS 6.24.2–3, 6–7.

⁶⁹ KS 8.8; TB 1.1.6.1–3. In the same way the Punarādheya is said to be exclusively Agni's share, his compensation for the gods' taking back their selves.

⁷⁰ See references in note 69; and KS 8.9.

On the other hand, the identification of man and his fire is strongest exactly during the interval period of dispersion and recuperation of sacrificial goods. That at least seems to be the meaning of the so-called avāntaradīkṣā, or intermediate consecration, which begins on the day immediately following the dīkṣā and ends after the leading forward of fire and Soma (Agniśoma-praṇayana).⁷¹ The mantra for initiating the avāntaradīkṣā says: "Your form be in me, my form be in you."⁷² At the opposite end, the visarjana (giving up the avāntaradīkṣā and its special observances), which significantly comes after the eastward procession of fire and Soma, both fire and sacrificer take up each their own form again. The two aspects—the deactivation or dispersion of the fire and the rigorous identification of the consecrated with his fire during the interval period—are not necessarily in conflict with each other, for during the expedition the fire is either symbolically taken up in the person consecrated or in the fire drill.⁷³ At the same time these periods are characterized as periods of dispersion, the expeditions serving the purpose of recuperating from the dispersal caused by the foregoing sacrificial distribution. That this involves strife and violence need hardly be argued, and indeed the interval of the avāntaradīkṣā (like those between brahmaudana and Agnyādheya or between Agnyādheya and Punarādheya) is explained by evoking once again the deva-asura conflict: the gods, fearing the asuras, entered the fire, and having in this way made Agni their protection, then defeated the asuras.⁷⁴ Finally—that is, when one has survived all contests and battles or, in terms of the classical ritual's avāntaradīkṣā, when the fire and Soma have triumphantly been brought forward—there is again a sacrifice and distribution of food and cattle, after which, tragically, the same cycle of danger and violence sets in again. In short, the world of the original ritual was governed by an inexorable cyclical rhythm of strife and violence punctuated at the nodal points by grandiose potlatch-like festivals that concluded the previous cycle and, at the same time, initiated a new one of disintegration and conflict; the obverse of this heroic view of the world was the necessity of constantly renewed exposure to death and destruction.

We are now in a position to see both the problem that the ritualists faced—namely, breaking out of this deadly cycle—and also how they attacked it. If the fire, the focus of life and well-being, had to undergo unremitting cycles of dispersion, reconquest, and renewed dispersion, then ritual means had to be devised to fix and stabilize it in its place so that life could be organized around it in a permanently stable fashion. As we have seen,

⁷¹ See W. Caland and V. Henry, §50 and 106e; and ĀpŚS 11.1.13, 18.3.

⁷² TS 6.3.2.6.

⁷³ ĀpŚS 6.28.8–11.

⁷⁴ TS 6.2.2.6–7.

the crux of the matter was the fact that the fire as the sustainer of life was dependent on the others who also had to fight for their own survival in a world of scarcity. The latter fact—the world of scarcity—could not be changed, but the ritual could. In other words, the ritualists had to work on the fire in ritual terms while the reality of the world remained as it was. The ritualist way was therefore to emancipate the śrauta fire from society and to make it absolutely individual and unequivocally identical with its sacrificer. The difference with the previous state of affairs will be at once apparent if we remember that before this the absolute identification of the consecrated with his fire was only thought to obtain during the intervals of dispersion and violent strife—or, in ritual terms, during the avāntaradikṣā. Now, however, the śrauta fire was to be permanently attached to and identical with the sacrificer. This meant, in the first place, that the śrauta fire had to be rigorously dissociated from the domestic, which inevitably remained bound up with marriage and household—and hence with society. We have already seen how this dissociation was achieved. Furthermore, the Agnyādheya, instead of being a period devoted to potlatchlike communal feasts and sacrifices at the nodal points in the cycle, had to be made into an asocial, strictly individual rite performed once and for all. And so it was, as one can see from the inadequate reasons given by the texts for the continued existence of the Punarādheya, as well as from the lack of reasons for the third ādhāna. For its explanation the ritualists had to fall back on the old mythological cycle of battles between the devas and asuras, which no longer had a place in the ritual. The cyclically alternating phases were deprived of their function. Loss, extinguishment, or other discontinuities in the maintenance of the fire now came to be viewed simply as ritual mistakes calling for equally ritual reparation.

But the elimination of the cyclical character of the fire ritual also meant that one had to do away with the intervals: the phases of the cycle had to be straightened out into a linear series of ritual acts. This is particularly visible in the discussion about whether or not an interval should be allowed between the ādhāna proper and the tanūhavīṃṣi offerings. Some argue for an unbroken immediate succession;⁷⁵ some compromise on a twelve-day period.⁷⁶ In other words, elimination of the cyclical phases leads to ritual *horror vacui*. All acts have to follow each other in an unbroken series, as we can see in the Agnihotra, which was originally also subject to cyclically alternating phases (still visible in the dikṣita's not being allowed to perform it⁷⁷) but developed into an almost obsessive repetition of evening and early morning offerings.

There remains, however, the problem of the fire's permanence: How can one hold the fire permanently? Keeping the fire going all the time is

⁷⁵ KS 8.8.

⁷⁶ TB 1.1.6.7.

⁷⁷ Heesterman, "Vedisches Opfer und Transzendenz," in G. Oberhammer, ed., *Transzendenzfahrt* (Vienna, 1978), pp. 29–44, esp. pp. 37ff.

obviously possible only for the man of permanent fortune, the gataśrī. But here the old cyclical usage of taking the fire into oneself or into the fire drill (by warming one's hands or the drill over the old fire, which is then left to go out) found a new interpretation. The relationship between the sacrificer and his fire no longer passed through alternating phases but instead remained constant. All ambivalence was eliminated. Even if in actual practice one used another fire—as in fact, one obviously does—the pious fictions of an unbroken permanence could be maintained. For the continuity of the fire was henceforth guaranteed by its owner, whose relationship with his fire was no longer subject to the vicissitudes of alternating phases. Conversely, the break between the domestic and brahmaudana fires on the one hand and the śrauta fires on the other could be bridged, not by using the same fire but by interposing another entity, namely the sacrificer and his fire drill, which then provided the link between the socially oriented domestic and asocial śrauta fires that now should be kept separate.

The importance of the fire drill, then, lies not in its technology but in its capacity to make the desocialization of the sacrifice, the individualization of the sacrificer, and the permanent identification of sacrificer and fire a viable proposition. This is well illustrated in the conclusion of the Śatapatha Brāhmaṇa's version of the Purūravas story, which relates how Purūravas finally succeeded in transcending his human condition to become a Gandharva so that he could be permanently united with the fleeting nymph Urvaśī.⁷⁸ Having been granted a boon by the Gandharvas, he asks to become one of them, but this is beyond their power. Or, as the text puts it: "There is not that pure form of fire among men that would make possible a sacrifice aimed at becoming a Gandharva." However, the Gandharvas do the next best thing by giving him some of their own fire in a fire pot (ukhā). Having gone back, he hangs the ukhā in a tree before entering the village. But the fire disappears, as Urvaśī did. The fire had become the āśvattha tree and the ukhā the śamī tree. In a second attempt the Gandharvas now advise him to devote himself for a year to the brahmaudana ritual, each time smearing three pieces of āśvattha wood with ghee and putting them into the fire. They feel, however, that this is a "hidden" or indirect (*parokṣa*) procedure. The reason may well be that the brahmaudana ceremony, as we saw, carries with it the connotations of community and strife. As a third tactic, they advise Purūravas to make himself an upper drilling stick of āśvattha wood and a lower one of śamī wood. The point here seems to be that he should make the drill himself instead of receiving the fire from his Gandharva in-laws, as was the case in the first attempt. But this also turns out to be too *parokṣa* to be successfully handled by man, apparently owing to the fact that two different kinds of wood are needed, one male and one female.⁷⁹ So finally the

⁷⁸ ŚB 11.5.1.14–17.

⁷⁹ See AV 22.3.5–4.1, where the use of different kinds of wood is rejected on the ground that this would constitute yonisamkara.

Gandharvas advise him to make both the araṇis from aśvattha wood only. Then, sacrificing with the fire that he churned with this fire drill without external aid or any parokṣa connection, Pūruravas did indeed transcend his human condition and became a Gandharva. And, as the Śatapatha Brāhmaṇa concludes hopefully, so will every sacrificer who himself makes the araṇis using only aśvattha wood.

In this way we can see that a relatively old text, the Maitrāyaṇī Saṃhitā, already indignantly rejects the possibility of taking the dakṣiṇāgni from some one else's fire and prefers it to be churned, however laboriously, with one's fire drill,⁸⁰ like the first of the other śrauta fires. For, after all: "Our ain reeks better than other folk's fire." The ritualist's ideal is to emancipate the sacrificer from the stresses and strains of the human condition, and the ultimate purpose of the fire drill is to serve this end. But at the same time this means divorcing oneself from human society for the fictitious benefit of becoming a heavenly being. And so the reasonable conclusion must be, as one of the texts has it, that the churned fire is the most pure (*punya*), but by the same token it is unproductive (*anardhuka*).⁸¹ In the final analysis the problem of how man may transcend his human condition remains wide open, even for the ritualists.

⁸⁰ MS 1.6.11.

⁸¹ KhādGS 1.5.3.

THE GEOMETRY OF THE VEDIC RITUALS

A. Seidenberg

I. VEDIC GEOMETRICAL RITUALS

THE GREAT, TWELVE-DAY Agnicayana rite takes place in a large trapezoidal area, the *mahāvedi*, and in a smaller rectangular area to the west of it, the *prācīnavamśa*. In the *mahāvedi* there is built a brick altar in the form of a "falcon about to take wing," and in the *prācīnavamśa* there are (among other things) three fire altars in specified positions, the *gārhapatya*, *āhavanīya*, and *dakṣiṇāgni*. The construction of the *mahāvedi*, the *prācīnavamśa*, and the various altars, if it is to be done exactly, requires a certain amount of geometrical knowledge. It is the object of the present essay to discuss the mathematics involved in this and in other Vedic rites, to consider its relevance for Greek and Sanskrit studies, and to indicate its bearing on the history of mathematics in general.

It is well to bring in Greek mathematics, for Greek and Vedic geometry have many things in common. As we shall see, the Vedic ritual constructions involve a large part of Euclid's *Elements*, Books I and II, and the source of the similarity—or rather the common part—is at issue. Moreover, the Vedic geometry is part of a sacrificial system, and there are indications that for the Greeks, too, or for their forerunners, geometry was associated with sacrifice.

Let us first glance at this geometry. The Indians had a class of sacred works, the Śulvasūtras, of which there are several versions, devoted to the geometrical constructions. The Śulvasūtras have been called "manuals for altar construction." When one hears that the ancient Indians had such works, one may think that one will find in them a few "carpenter's rules," that is, a few applications of elementary geometry to the construction of material objects. One does, indeed, find there rules for constructing a right angle, which is sometimes accomplished by applying the Theorem of Pythagoras: the ends of a cord of eight units' length are tied to two pegs hammered into the earth at points *A* and *B* four units apart, a mark is made at a point three units from one end of the cord, say the end tied at *B*, and the string is then picked up at this point and stretched so that the mark touches the earth at *C*, whereupon the right angle *ABC* is produced (see Fig. 1; also see Vol. I, Fig. 14, p. 247). Right angles are also constructed without recourse to the Theorem of Pythagoras.

Yet a perusal of the Śulvasūtras shows that matters are not quite so straightforward. The construction of altars (or "agnis") of various shapes

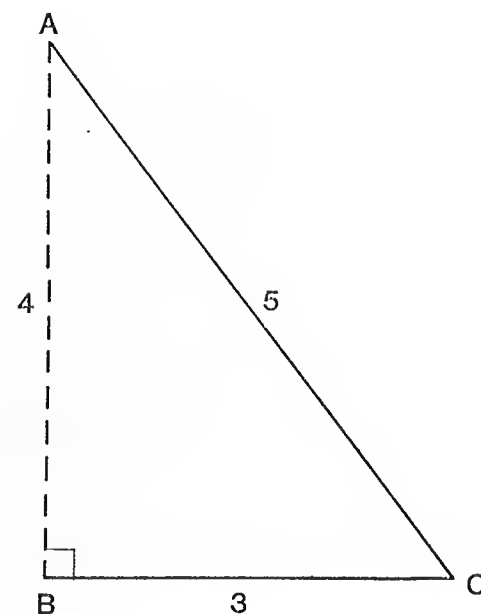


Figure 1—Construction of a right angle

is described, the shape depending on the particular ritual. Thus there are square altars, circular altars, and altars of many other shapes. The altars were, for the most part, composed of five layers of bricks that together reached to the height of the knee; for some cases ten or fifteen layers and a corresponding increased height of the altar were prescribed. Most, though not all, of the altars had a level surface and these were referred to in accordance with the shape and area of the top (or bottom) face. The basic falcon-shaped altar (a variant of which occurs in the Agnicayana ritual) had an area of $7\frac{1}{2}$ square puruṣas: the word *puruṣa* means “man” and is, on the one hand, a linear measure—namely, the height of a man (the sacrificer) with his arms stretched upwards (about $7\frac{1}{2}$ feet, say)—and, on the other, an areal measure (about $56\frac{1}{4}$ square feet). Aside from secondary modifications or variations, the body of the falcon-shaped altar was a 2×2 square (4 square puruṣas), and the wings and tail were one square puruṣa each; in order that the image might be a closer approach to the real shape of the bird, the wings and tail were lengthened, the former by one-fifth of a puruṣa each, the latter by one-tenth (see Fig. 2; for a variant, see Fig. 3). This was the size and shape of the falcon altar upon its first construction. On the second construction, one square puruṣa was to be added—that is, the area of the second altar constructed would then be $8\frac{1}{2}$ square puruṣas; on the third construction another square puruṣa was to be added; and so on, until one comes to the “one-hundred-and-one-[and-a-half]-fold” altar. The sacrificer is climbing a ladder, his sacrificial rank being determined by, or determining, the area.

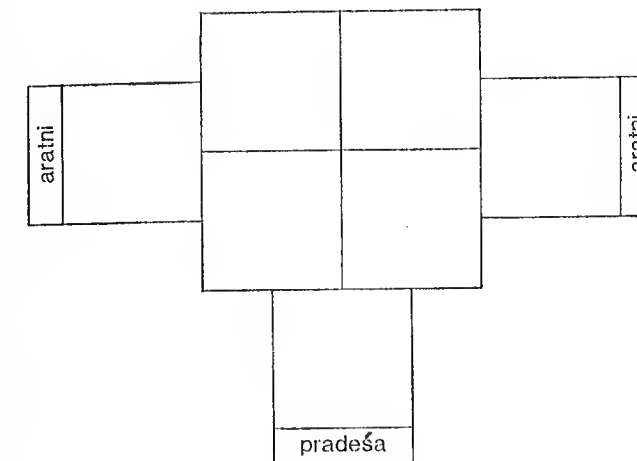


Figure 2—Basic bird altar

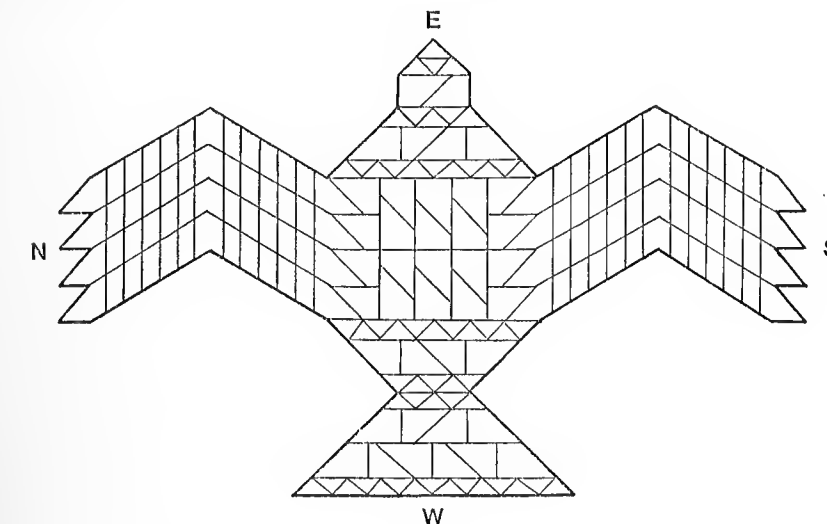


Figure 3—Variant of the basic bird altar

In the construction of the larger altars ($8\frac{1}{2}$, $9\frac{1}{2}$, . . .), the same shape as the basic altar is required, and the problem of finding a square equal in area to two given squares is actually and explicitly involved: the construction is carried out using the Theorem of Pythagoras. The problem of converting a rectangle into a square is also explicitly involved. This is not carpentry.

There is no intention here of minimizing the role of “carpenter’s rules,” and it may be that there existed a tradition of “tricks of the trade,” but if so the Śulvasūtras say nothing about them.

The main versions of the Śulvasūtras are those of the schools of Baudhāyana, of Āpastamba, and of Kātyāyana. Baudhāyana gives the Theorem

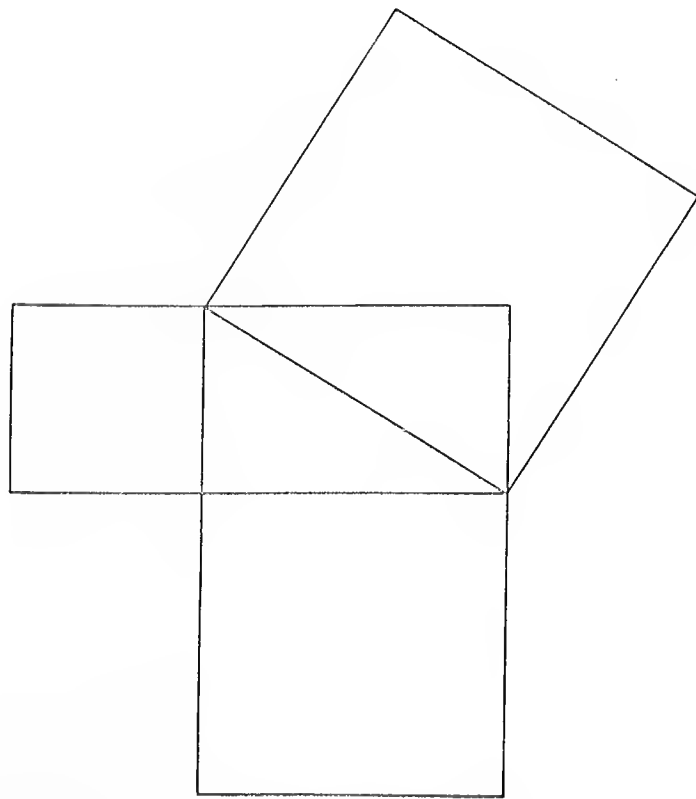


Figure 4—"The cord stretched in the diagonal . . ."

of Pythagoras (see Fig. 4): "The cord stretched in the diagonal of an oblong produces both [areas] which the cords forming the longer and shorter sides of an oblong produce separately." Āpastamba and Kātyāyana give it in almost the same words (cf. BŚulvaS 1.48; ĀpŚulvaS 1.4; KŚulvaS 2.11).

Using this theorem, the Śulvasūtras show how to construct both a square equal to the sum of two given squares and a square equal to the difference of two given squares (cf. BŚulvaS 1.51; ĀpŚulvaS 2.5; KŚulvaS 3.1).

Note that the Theorem is given as a theorem on rectangles, rather than as a theorem on right triangles, as in *The Elements*, I.47. Moreover, the Śulvasūtras state the theorem separately for oblongs and for squares. From a logical point of view these differences are of no importance, but the presence of logical irrelevancies can be of great help in comparative studies (cf. Seidenberg 1962, 503).

For turning an oblong into a square Baudhāyana says: "If you wish to turn an oblong into a square [see Fig. 5] take the *tiryaṅmānī*, i.e., the shorter side $[AD]$ of the oblong $[ABCD]$, for the side of a square $[AEFD]$, divide the remainder $[EBCF]$ (that part of the oblong which remains after the square has been cut off) into two parts and inverting [one of them] join these two parts to the sides of the square. (We get then a large square $[AGKJ]$ out of which a small square $[HKIF]$ is cut out as it were.) Fill the empty space (in

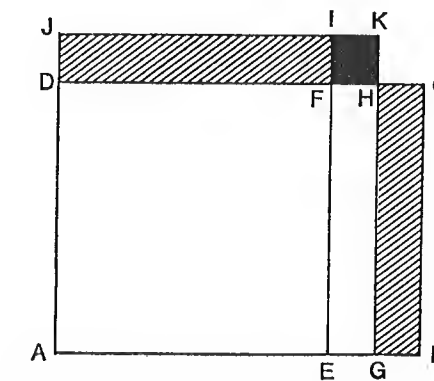


Figure 5—Squaring the oblong

the corner) by adding a small piece (a small square). It has been taught how to deduct it (the added piece)." Āpastamba and Kātyāyana give the same method in about the same words (cf. BŚulvaS 1.54, ĀpŚulvaS 2.7, KŚulvaS 3.2).

Thus Baudhāyana first converts the oblong into the difference of two squares and then uses a previous result (BŚulvaS 1.51) to convert the difference into a square. This is entirely in the spirit of *The Elements*, Book II. The problem and its solution are precisely that of II.14. The solution there depends on the Theorem of Pythagoras and on II.5, which tells how to regard a rectangle as the difference of two (specified) squares. Propositions II.5 and II.6 are closely related and say nearly the same thing; the diagram for II.6 is precisely that of Fig. 5.

BŚulvaS 2.12 tells how the larger altars are to be constructed: "That which is different from the original form of the agni (i.e., that area which is to be added to the area of the *saptavidha*, i.e., sevenfold, agni) is to be divided into fifteen parts and two of these parts are to be added to each *vidha* (to each of the seven *puruṣas*; the one remaining part has consequently to be added to the remaining half *puruṣa*); with seven and a half of these (increased *vidhas* [i.e., units]) the agni is to be constructed." KŚulvaS 5.4 in effect does the same. ĀpŚulvaS 8.6 is different in that it speaks of expanding the "7" to "*n*" and in that some question remains as to what to do about the "half."

Baudhāyana does not explain that the "two parts," which we may suppose to be in the form of a rectangle, are to be converted into a square as explained, and then added, as explained, to the smaller *vidha* (i.e., the 1×1 square) to get the increased *vidha*, or unit; nor should this have been expected as the Śulvasūtras are about as brief as possible. Kātyāyana, however, though the result is the same, follows a slightly different method, in the course of which he is obliged to mention the conversion of a rectangle into a square.

2. EVIDENCE FOR GEOMETRICAL RITUALS AMONG THE GREEKS

Let us now examine the evidence for geometric rituals among the Greeks. The association of early Greek mathematics with cult is one of the commonplaces of Greek history. The passages from ancient authors that will now be considered have often been mentioned, yet their relation to ritual has not been appreciated.

Several ancient authors tell us that Pythagoras sacrificed an ox upon discovery of some theorem (cf. van der Waerden 1961, 100). Thus Plutarch (*Epicurum* IX) quotes a distich—"When Pythagoras discovered his famous figure, for which he sacrificed a bull"—and he says that the figure in question is either that of the square on the hypotenuse or that of the application of areas. "Application of areas" refers to the problems taken up in *The Elements*, VI.28 and 29, which in effect show how to solve quadratic equations. Elsewhere (*Quaestiones Convivii*, VIII, Quaest. 2.4), however, Plutarch says that the bull was sacrificed in connection with the problem of constructing a figure with the same area as another figure and a shape similar to a third.

Professor van der Waerden (1961, 117) thinks that these three subjects, which indeed are mathematically related, were not arbitrarily thrown together but formed a part of a Pythagorean textbook, "The Tradition of Pythagoras." In any event, the third problem is precisely the central problem of the *Śulvasūtras*, and the theorem on the square of the hypotenuse is needed for its solution. The turning of a rectangle into a square is, at least abstractly, the simplest case. There is no clear evidence in the *Śulvasūtras* on the application of areas, but it has been suggested that the Vedic priests could solve quadratic equations, and there are some grounds, not very solid to be sure, for this opinion. (Cf. Datta, 1932, 173f.).

Van der Waerden (1961, 100) writes: "But the entire story is an impossible one, because Pythagoras was strongly opposed to the killing and sacrificing of animals, of cattle especially." Yet it is a plain fact and not a reconstruction that many an ox fell victim to the Theorem of Pythagoras. I do not suppose, any more than van der Waerden supposes, that Plutarch is relating history. Rather, I suppose that he is transmitting legend. Legends reflect custom, nevertheless, and the custom here reflected is that of sacrificial rites associated with exact geometrical constructions. I do not even suggest that the custom is a living one, merely that, as a comparison shows, evidence of the Indian practice is found in Greek history. A vegetarian partaking of the sacrifice, it may be remarked, is not a contradiction in terms. The Brahmins are vegetarians, but they sacrifice—and eat—goats, though only when consecrated in a ritual context.

The builder of a fire altar was called an agnicit. According to one of the sacred works, the *Taittiriya Saṃhitā* (5.2.5.5–6), an agnicit should live upon what is obtained freely from nature; even the products of sowing are forbidden. In particular the flesh of birds is forbidden (cf. also the passages

from the *Taittiriya Saṃhitā* 5.7.6.1 and the *Śatapatha Brāhmaṇa* 10.1.4.13 cited in *Agni*, Vol. I, p. 87). The Theorem of Pythagoras, as we have seen, used to be attributed to Pythagoras (c. 550 B.C.), but this is no longer the general opinion, since, as we now know, the theorem was known in Old Babylonia some 1200 years earlier. Similarly, it would appear, the role of the agnicit was imposed on Pythagoras.

One of the three great classical problems was the so-called duplication of the cube (the other two were the squaring of the circle and the trisection of the angle). A large part of Greek mathematics was actually built up in attempts to solve these problems. Eutocius, the commentator of Archimedes, produces what he calls a letter from Eratosthenes (c. 240 B.C.) to King Ptolemy concerning the first of these. This letter is nowadays considered to be spurious, but it contains some important material—in particular, two legends about the duplication problem. According to the first (cf. van der Waerden 1961, 160), "It is said that one of the ancient tragic poets brought Minos on the scene, who had a tomb built for Glaucus. When he heard that the tomb was a hundred feet long in every direction, he said: "You have made the royal residence too small, it should be twice as great. Quickly double each side of the tomb, without spoiling the shape." He seems to have made a mistake. For when the sides are doubled the area is enlarged fourfold and the volume eightfold." Afterwards, we are told, Hippocrates of Chios (c. 430 B.C.) worked on the problem. The letter continues: "It is further reported that, after some time, certain Delians, whom an oracle had given the task of doubling an altar, met the same difficulty. They sent emissaries to the geometers in Plato's academy to ask them for a solution. These took hold with great diligence of the problem."

Van der Waerden (1961, 160ff.) is concerned with tracing the source, or sources, of the "letter." He finds that the second part derives from the *Platonicus* of Eratosthenes. He considers the *Platonicus* to be a dramatic story, and hence not a historical source, though Eratosthenes may have made use of historical materials. The first part "probably derives from historical sources," and some credence can be given to the tradition that Hippocrates of Chios worked on the problem. According to another reconstruction (Cantor, 1907, 203), the poet who "brought Minos on the scene" was Euripides (485–406 B.C.).

We have, then, good grounds for believing that legends of geometric rituals existed in Greece in the third and even the fifth centuries B.C.

According to Theon of Smyrna (Hiller, ed., p. 2), Eratosthenes said that the duplication was for the purpose of fighting a plague. Now it would be interesting to know whether the oracle at Delos really did put the problem of the duplication of the cube, but if the issue is the nature of the origin of the idea, and not merely its local history in Greece, this can hardly be of crucial importance. If the oracle did put the problem, the question is: How did it ever occur to the oracle that doubling an altar was a way of fighting a plague? And if the oracle did not put the problem, the question is

still the same: How did the person who made up the story get the idea that doubling the altar would defeat a plague?

In the Delian legend the temple "architects" are confronted with a geometrical problem: in India the priests were actually involved with geometrical problems. In the legend the altar of Apollo was to be varied for a special purpose: in India the altar actually was varied for special purposes. In the legend the altar is varied, the form remaining constant: in India this was the actual practice (in the one case, to be sure, it is the shape of a volume; in the other, of an area). In the legend the altar is doubled: in India, multiplication of the area of the vedi and of the agni by specified constants on specified occasions explicitly occurs. Thus the area of the mahāvedi at the Sautrāmaṇī sacrifice was to be the third part of the mahāvedi at the Soma sacrifice and the area of the agni at the Horse sacrifice was three times that of the basic sevenfold agni (cf. ĀpŚulvaS 5.8 and 21.6). Where, then, did either the oracle or Eratosthenes get the idea that doubling the altar was a way of fighting a plague? Does it not seem likely that he got it from a once-existing rite, perhaps in the fossilized form of a legend?

In Greece sacrifice could be used to harm an enemy (Republic 364c); in India the same was true (TS 5.4.11), and it may be that disease was considered as an enemy, or as the instrument of an enemy, to be fought with sacrifice.

3. HISTORY OF OUR KNOWLEDGE OF THE ŚULVASŪTRAS

In 1900 the view generally held was that mathematics as a body of knowledge worthy of the name of science did not exist in the ancient oriental civilizations (i.e., those outside of Greece). The monumental work "Mathematische Keilschrift-Texte," published in the thirties, in which Neugebauer deciphered the mathematical cuneiform texts of Old Babylonia (about 1700 B.C.), quite transformed our notions of ancient oriental mathematics, at least for Babylonia, but at the beginning of the century there was little known about the mathematics of (Old) Babylonia and Egypt. From Old Babylonia one had a table of squares up to 60×60 and an astronomical text giving the magnitude of the illuminated portion of the moon for every day from new to full moon (Cajori 1929, 4ff.). From Egypt one already had the Rhind mathematical papyrus, but paleographers could argue whether the area of a triangle was correctly computed in it. So Ball (1901, 1) could easily bring himself to write: "The history of mathematics cannot with certainty be traced back to any school or period before that of the Ionian Greeks." This did really correspond to the situation as known—except for the Śulvasūtras and other sacred works of the Indians.

In 1874 Thibaut had begun his translation of the Baudhāyana Śulvasūtra, and in an 1875 paper he gave a general account of the Śulvasūtras,

with many excerpts and comments, and in particular he indicated their relation to the older sacred literature. In doing this his principal object was to make available to the learned world the mathematical knowledge of the Vedic Indians, but that wasn't his only object. After commenting that a good deal of Indian knowledge could be traced back to requirements of the ritual Thibaut added: "These facts have a double interest. They are in the first place valuable for the history of the human mind in general; they are in the second place important for the mental history of India and for answering the question relative to the originality of Indian science. For whatever is closely connected with the ancient Indian religion must be considered as having sprung up among the Indians themselves, unless positive evidence of the strongest kind point to a contrary conclusion."

And after giving reasons for not relying, in this respect, on "the Lilāvati, the Vijaganīta, and similar treatises," he added: "We must search whether there are not traces left pointing to a purely Indian origin of these sciences. And such traces we find in a class of writings, commonly called Śulvasūtras, that means "sutras of the cord," which prove that the earliest geometrical and mathematical investigations among the Indians arose from certain requirements of their sacrifices."

My object at the moment is not to enter into a critique of Thibaut's views, but merely to display them. Thibaut himself never belabored or elaborated these views, nor did he formulate the obvious conclusion, namely, that it was not the Greeks who invented plane geometry, it was the Indians. At least this was the message that the Greek scholars saw in Thibaut's paper. And they didn't like it.

Most of the "refutations" were mere haughty dismissals, but Cantor, a leading historian of mathematics of the day, at least examined the evidence, and even gave arguments. In 1877 Cantor, realizing the importance of Thibaut's work, began a comparative study of Greek and Indian mathematics. He starts his paper by reminding us that Greek studies were already about four hundred years old, and Indian studies only about one hundred. As a consequence Greek dates could usually be given within a decade, whereas estimates of Indian dates varied by centuries. Yet even in 1907, in the third edition of his *Geschichte der Mathematik*, he postulates that Heron was about 100 B.C., emphasizing, however, that other opinions vary from 200 B.C. to A.D. 200. Recently Neugebauer (1962, 171) has assigned Heron to A.D. 62.

Cantor made many acute observations, and he concluded that Indian geometry and Greek geometry, especially that of Heron, are related. For Cantor there remained only the question of who borrowed from whom. He expresses the opinion that, in geometry, the Indians were the pupils of the Greeks.

Thibaut in 1875 had assigned no absolute date to the Śulvasūtras, thereby showing proper scholarly restraint, so Cantor felt free to press his own chronology. He had been struck by the analogy of the Indian altar problems

to the Greek duplication of the altar and grave problems. According to Cantor, about 100 B.C. Heron's geometry intruded into India, where it was given a theological form. This theological geometry then left traces in Greece in poetry ascribed (by Cantor himself) to Euripides (485–406 B.C.)—a clear contradiction. Cantor eventually (in 1904) renounced his view and conceded a much earlier date to Indian geometry. Even so, he did not believe that Pythagoras got his geometry from India; he preferred to believe it was Egypt.

Finally, in 1899 Thibaut, perhaps prodded into it by dates for the Śulvasūtras that he considered to be far off the mark (as for example the 100 B.C. of Cantor), ventured to assign the fourth or the third centuries B.C. as the latest possible date for their composition (it being understood that this refers to a codification of far older materials). Thibaut's estimate agrees pretty well with those of a number of other Sanskrit scholars, starting with Max Müller, who some fifty years earlier had given 600–200 B.C. (For some of the references, see Seidenberg 1962, 505.)

The Śulvasūtras, as Thibaut remarked, are but a codification of Vedic geometric knowledge, and the dating of this knowledge and of the Śulvasūtras are separate problems. As for the knowledge, by taking into account the Greek legends, we can say with complete confidence that it was already old in the third century B.C. The date of the Śulvasūtras was considered important as giving a date before which the Vedic geometric knowledge is certain. From this point of view, 500–300 B.C. is a very conservative estimate.

One should not imagine that the battle lines were clearly drawn, with the Sanskrit scholars on one side and the Greek on the other. Far from it! In 1884 Weber, a Sanskrit scholar, expressed the opinion that there was "nothing of a literary-historical nature standing in the way of the assumption of a use [on the part of the Śulvasūtras] of the teachings of Hero of Alexandria"—of 215 B.C. according to Weber (1884, col. 1564).

After giving his estimate, Thibaut added: "There is nothing striking in the independent development of a limited amount of practical geometrical knowledge by two different peoples." But this can hardly be a considered statement! Rather it shows that Thibaut was getting lost in the polemics. A "limited amount of practical knowledge" is surely not what Cantor was thinking about; nor could it have been what Thibaut was thinking about in 1875, else what is the relevance of his "mighty sway of religion" and "requirements of the sacrifice"? (Nor is it what Neugebauer and van der Waerden are thinking about when, especially in view of the information coming in from Old Babylonia, they go to great lengths to explain why, for highly technical reasons, Greek geometry took the form it did.) Thibaut's remark may have been a polite gesture to Cantor, who a few years later changed his mind, or it may be that Thibaut really did not know how to answer the scholarly objections.

At the start of the twentieth century, Bürk (1901–2, 55, 56) translated the Śulvasūtra of Āpastamba, prefixing it with a commentary. It was this work,

according to Cantor, that brought about a shift in the situation and led him to change his mind. This is to give Bürk too much credit. Bürk's paper is excellent, and he does make original points, but the argument already occurs in all its essential aspects in Thibaut's paper. Anyway, the damage had been done, and the Śulvasūtras have never taken the position in the history of mathematics that they deserve. Bell (1940) and van der Waerden (1961) do not even mention them, though their contents are briefly described in Cantor's *Geschichte der Mathematik*, which both cite. Neugebauer mentions them briefly a couple of times. Perhaps with the date 1700 B.C. well in hand, the question of whether Vedic geometrical knowledge dates from A.D. 200, 100 B.C., 300 B.C., 500 B.C., or even 1000 B.C., faded into insignificance.

A.B. Keith, a Sanskrit scholar, denied any connection between the Śulvasūtras and the more ancient sacred literature, especially the Saṃhitās (1910, 519–521), and as the connection is a vital point in attempts at a chronology, we turn next to this.

4. RELATION OF THE ŚULVASŪTRAS TO THE OLDER SACRED LITERATURE

There are various strata of the Vedic sacred literature. Everybody agrees on their relative ages (at least within the individual schools). Of the strata with which we shall be concerned, the Sūtra period is the most recent. Roughly speaking, the Śulvasūtras contain all the geometrical details we want. They never say they are being original; they always insist that they are doing things as it has been taught, especially in the Saṃhitās and Brāhmaṇas. The Brāhmaṇas purport to give the symbolic meaning of the rituals; the Saṃhitās give the formulae that are uttered at the rites. In the nature of things, the Saṃhitās come before the Brāhmaṇas, and both come before the Śulvasūtras (or, to put it more generally, before the Kalpasūtras, which digest the teachings relative to the performance of the rites).

One might presume that the geometric constructions given by the Śulvasūtras with reference to the Brāhmaṇas and Saṃhitās must have been known to the compositors of those works, and so be coeval with them. But that, however plausible it may be, will here be the issue.

The Śatapatha Brāhmaṇa speaks about the sevenfold altar and its being augmented one square puruṣa at a time until it is transformed into the one-hundred-and-one-fold altar. Thus in ŚB 6.1.1.1–3 we are told that "in the beginning" the Ṛṣis (vital airs) created seven separate persons, who are assimilated to squares. After giving a reason they say: "Let us make these seven persons one Person!"—whereupon the seven are composed into the falcon-shaped altar; 10.2.2.7 speaks of the lengthening of the wings, and 10.2.2.8 of the tail. In 10.2.3.18 we read: "Sevenfold, indeed, was Prajāpati created in the beginning. He went on constructing [developing] his body,

and stopped at the one-hundred-and-one-fold one. . . . Hence one should first construct the sevenfold [agni] and then by increments of one [square puruṣa] successively up to the one-hundred-and-one-fold one." (Cf. Egeling's translation, 1882-1900.) Passage 10.2.3.11 describes a "ninety-eight-fold" bird: "Now as to the (other) forms of the fire altar. Twenty-eight [square] puruṣas and twenty-eight [square] puruṣas is the body, fourteen the right, and fourteen the left wing, and fourteen the tail. Fourteen *aratnis* he covers (with bricks) on the right, and fourteen the left wing, and fourteen *vitastis* on the tail. Such is the measure of an (altar of) ninety-eight [square] puruṣas with the additional space for wings and tail." (Cf. Seidenberg 1962, 508f., for some comments on this translation.)

ŚB 10.2.3.6, in speaking of the "construction [of the] higher forms" (i.e., larger altars) and warning the sacrificer not to enlarge the gārhapatya altar, mentions that the "fathom" (for measuring the bird altar) and the "steps" (for measuring the mahāvedi) are "increased accordingly." Thus, in agreement with the Śulvasūtras, for the larger altars one simply uses "new" units in place of the "old."

From these passages it is not only clear but explicit that the Śatapatha Brāhmaṇa knows the basic $7\frac{1}{2}$ puruṣa bird altar, its augmentation 1 square puruṣa at a time, and the principle of maintaining similarity of form. Elsewhere the Śatapatha Brāhmaṇa shows that it is concerned with, or rather takes for granted, exact constructions. Thus in 10.2.1.1-8 the variation in the wings is spoken of. We read: "He (the sacrificer) thus expands it (the wing) by as much as he contracts it; and thus, indeed, he neither exceeds (its proper size) nor does he make it too small." And 10.2.3.7 says that those who deprive the agni of its due proportions will suffer the worse for sacrificing. The exact construction of the larger altars (except for the sixty-seven-[and-a-half]-fold altar) requires, in effect, the Theorem of Pythagoras. I therefore regard it as certain that the Śatapatha Brāhmaṇa knows the Theorem.

It is conceivable that the "ninety-eight-fold" altar here spoken about is really the $101\frac{1}{2}$ -fold one. According to Baudhāyana and the Śatapatha Brāhmaṇa as just cited, the length of the "new" unit x after the m th augmentation satisfies $x^2 = 1 + (2m/15)$. Here m runs from 1 to 94; for $m = 94$ one gets the largest altar, and $x^2 = 13\frac{8}{15}$. The 14 may be a rounding off of $13\frac{8}{15}$; and if it is, then the $101\frac{1}{2}$ -fold altar is being described. This rounding off, though perhaps reasonable in context, may have given rise to confusion, for a moment later the Śatapatha Brāhmaṇa appears to speak of adding 3 more puruṣas to the body and proportionate amounts to the wings and tail—and here, at least, there were objections that the agni was being made too large (cf. ŚB 10.2.3.15). In any event, note that $\sqrt{13\frac{8}{15}}$, like $\sqrt{14}$, is irrational, and that in either case the larger altar is similar to the basic one.

The Śatapatha Brāhmaṇa (3.5.1.1-6) and the Taittirīya Saṃhitā (6.2.4.5) both explicitly give the dimensions of the mahāvedi: this is an isosceles tra-

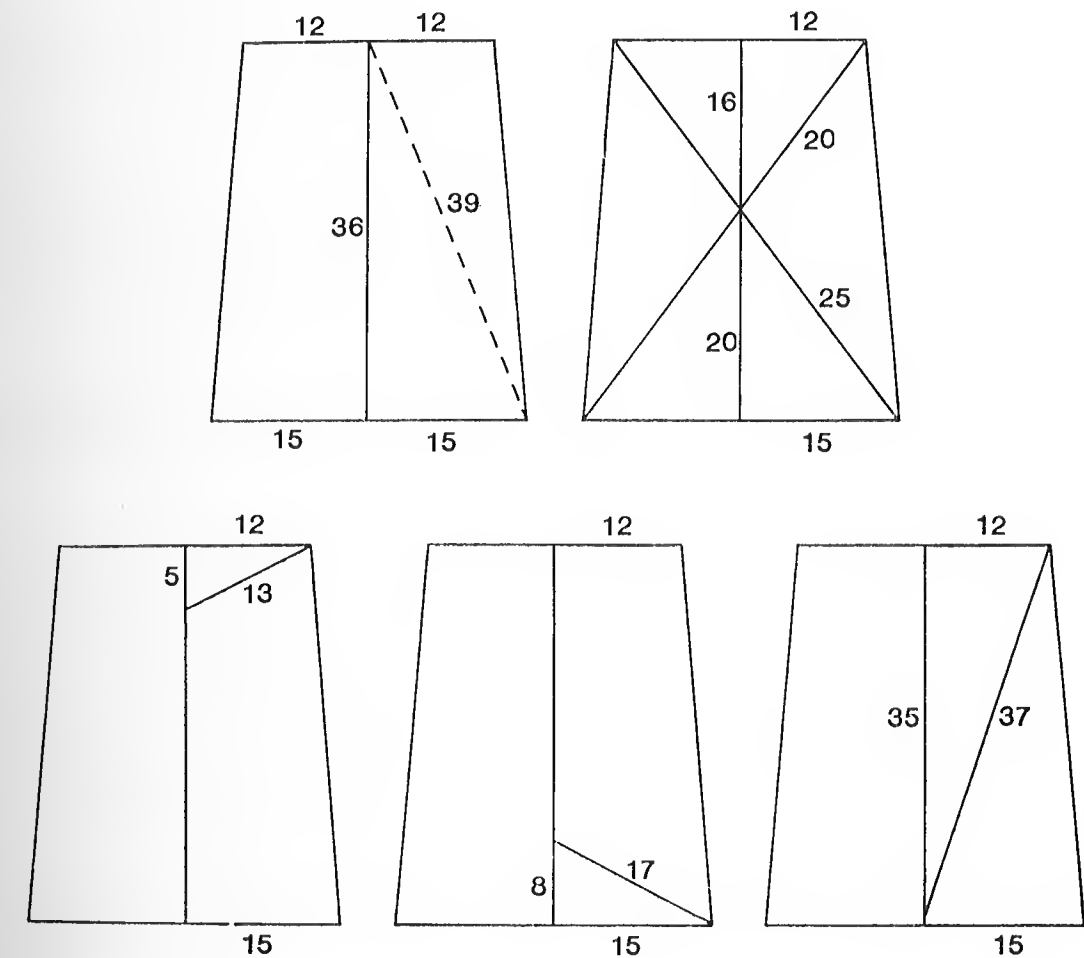


Figure 6—Constructions of the mahāvedi

pezoid (see Fig. 6) having bases 24 and 30 and width 36. There is a (15, 36, 39) triangle here, and the Śulvasūtras use this to construct the mahāvedi. Now the question is: Did the priests at the time of the Śatapatha Brāhmaṇa and of the Taittirīya Saṃhitā know this Pythagorean triangle? If not, we conclude that the 39 was a later discovery, and that it was just an accident—or let's say, a minor miracle—that this distance was an integral number of units. The absence of this 39 is the nub of Keith's (1910) argument. Now the mahāvedi is loaded with Pythagorean triples, i.e., triples (a, b, c) satisfying $c^2 = a^2 + b^2$. Not only is (15, 36, 39) there, but also (12, 16, 20), (15, 20, 25), (5, 12, 13), (8, 15, 17), and (12, 35, 37), all mentioned in the Āpastamba Śulvasūtra in connection with the construction of the mahāvedi (see figures). I think the presence of these, especially the first two, converts the minor miracle into a major miracle. The conclusion is nearly certain that the Theorem of Pythagoras was known at the time of the Taittirīya Saṃhitā.

Still another connection with the Śatapatha Brāhmaṇa and Taittirīya Saṃhitā will be made below.

As to the chronology, L. Renou and J. Filliozat, whose work is well thought of in Sanskrit circles, place the Śatapatha Brāhmaṇa at 1000–800 B.C. (1947, I, 267). If the estimates of the Sanskrit (and of the Greek) scholars are at all reliable, we come to the desired conclusion, namely, that Greek geometry (especially the Theorem of Pythagoras) did not somehow make its way into Vedic geometry, as Greek geometry is only supposed to have started about 600 B.C.

There are some general considerations, aside from any special chronology, pointing in the same direction. There are reasons for thinking that many ancient secular activities, perhaps all (except those shared with the apes), arise from ritual. Thibaut gives examples (1875, 227); and others are mentioned in my "Ritual Origin of Geometry" (Seidenberg 1962, 490). The secularization of a ritual practice is easy to understand. Ritual often requires considerable social organization. If this organization breaks down, then the ritual ends, but parts can go on having a separate existence. In India geometry is still seen in a ritual setting; in Greece the ritual has fallen away, though even there philosophical (or theological) overtones remain.

5. THE KĀMYA ("OPTIONAL") SACRIFICES FOR SPECIAL DESIRES

The object of this section is to give a somewhat broader view of Vedic mathematics. For a reason that will become clear later, in the next section another chronological connection will be made, though I can do no better in this regard than what has already been done with the bird altar.

The Taittirīya Saṃhitā 5.4.11 speaks of a number of altars to be employed for special desires. The Baudhāyana Śulvasūtra goes through the list seriatim, and except for the first three altars, which are somewhat more

complicated to describe than the others, the Āpastamba Śulvasūtra does the same, introducing each altar by a citation from the Taittirīya Saṃhitā. From this alone it is plausible to suppose that the altars at the time of the Taittirīya Saṃhitā had the same shapes and sizes as later and that their constructions were essentially the same, but other evidence makes this still more plausible. See also BSS 17.28–29, below, pages 666–671.

A perusal of Taittirīya Saṃhitā 5.4.11 (cited in Seidenberg 1962, 507) shows that there are some Brāhmaṇa-like explanations there, but absolutely nothing on the sizes, and almost nothing on the shapes, of the altars. Nor should this have been expected: the place for such details is in the Śulvasūtras or in some other part of the Kalpasūtras, and we do in many cases find them there.

ĀpŚulvaS 12.3 speaks of the "modifications" of the basic $7\frac{1}{2}$ -fold agni for the "special desires"; since in many cases explicitly (I believe in all uniformly) these altars have an initial area of $7\frac{1}{2}$ puruṣas, it is clear that the "modifications" refer to shape and not to area. Underlying these transformations is the view that the shape for some reason may be changed, but the area is to remain constant. (See also below, pages 113–118.)

The seven-(and-a-half)-fold bird altars, even the complicated ones involving bricks of many shapes, do not involve the Theorem of Pythagoras, though the eight-(and-a-half)-fold do. On the other hand, even the simple triangular altar as constructed in the Śulvasūtras involves the theorem. The triangle is obtained from a square whose area is fifteen square puruṣas (see Fig. 7). To construct the square, the Theorem of Pythagoras is applied. Since the shape of the triangle is not given beforehand, the problem of converting a given area into a given shape is not involved.

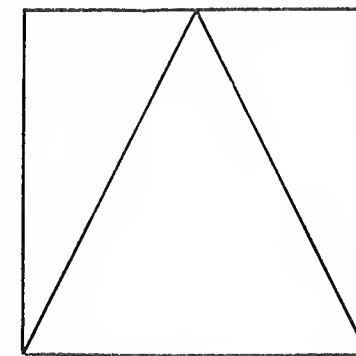


Figure 7—Construction of a triangle of area $7\frac{1}{2}$ square puruṣas

The trough mentioned in the Taittirīya Saṃhitā, as described in the Śulvasūtras, is a figure having the shape of two juxtaposed rectangles (see Fig. 8). In the BŚulvaS the large rectangle is a square: "Its side is 3 puruṣas less one third" (cf. 3.219–224). The small rectangle is "one puruṣa less one third" by "half a puruṣa plus ten aṅgulis (= $\frac{1}{12}$ of a puruṣa)." Thus its

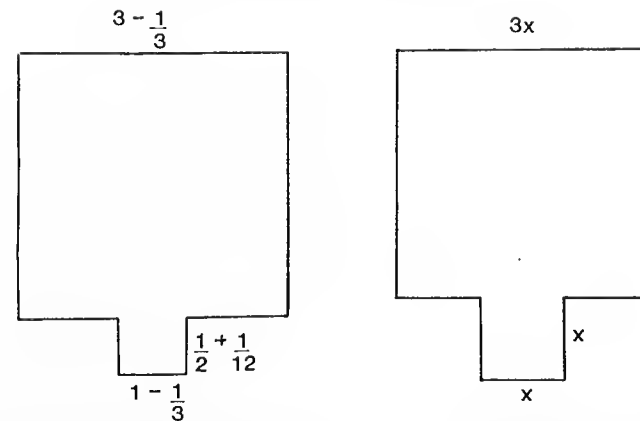


Figure 8—Trough according to Baudhāyana

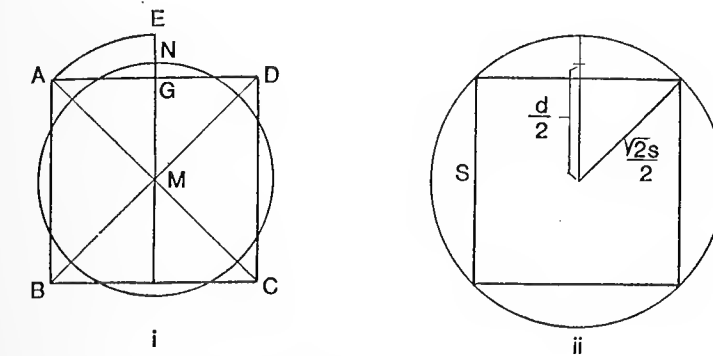
Trough according to Āpastamba

area is $7\frac{1}{2}$ square puruṣas. Āpastamba's trough is different. ĀpŚulvaS 13.10 says that the handle is "one tenth of the whole area." From the description of the bricks one sees that the rectangles are squares. ĀpŚulvaS 13.10 continues: "Its subtraction . . . has been taught." This would appear to mean that one starts with a square of $7\frac{1}{2}$ square puruṣas, then divides this into two rectangles, one of which is one-tenth of the whole, then converts the smaller of these rectangles into a square, and so on. Note that the side of the large square is exactly three times that of the small; if the size were not understood to be specified, the altar could be described in this simpler way. The construction of the trough as described by Āpastamba is a problem in converting a polygon of given area into a polygon of given shape.

One of the shapes for an altar was a circle, and the problem of converting a square into a circle thus arises. We call this problem the *circulature of square*: it is to be clearly distinguished from the problem of *squaring the circle*, which is to construct a square equal to a given circle. This latter problem is also treated in the Śulvasūtras, but it did not have, so far as I could tell, a sacred application.

In the Śulvasūtras the circulature of the square is done as follows (see Fig. 9i). In square $ABCD$, let M be the intersection of the diagonals. Draw the circle with M as center and MA as radius; and let ME be the radius of the circle perpendicular to the side AD and cutting AD at G . Let $GN = \frac{1}{3}GE$. Then MN is the radius of a circle having an area equal to the square $ABCD$. (Cf. BŚulvaS 1.58; ĀpŚulvaS 3.2; KŚulvaS 3.13.)

This circulature of the square involves no arithmetic. One may imagine an ancient ritualist starting from the square, observing that the inscribed circle is too small, the circumscribed circle too large, and guessing that one should take $GN = \frac{1}{3}GE$ (see Fig. 9). The line of thought, though approximative, is geometric. The solution comes to taking $d/s = (2 + \sqrt{2})/3$, where d is the required diameter and s is the side of the given square (see Fig. 9ii). For the reverse problem, that of squaring the circle, BŚulvaS. 1.59 says: "If



$$MN = MG + \frac{1}{3}(ME - MG)$$

$$\frac{d}{2} = \frac{s}{2} + \frac{1}{3}\left(\frac{\sqrt{2}s}{2} - \frac{s}{2}\right)$$

Figure 9—Circulature of the square

you wish to turn a circle into a square, divide the diameter into 8 parts, and again one of the 8 parts into 29 parts; of these 29 parts remove 28, and moreover the sixth part [of the one-part left] less the eighth part [of the sixth part]. The meaning is that the side of the required square = $\frac{7}{8} + \frac{1}{(8 \cdot 29)} - \frac{1}{(8 \cdot 29 \cdot 6)} + \frac{1}{(8 \cdot 29 \cdot 6 \cdot 8)}$ of the diameter of the given circle.

The Śulvasūtras have the rational approximation $\sqrt{2} = 1 + \frac{1}{3} + \frac{1}{(3 \cdot 4)} - \frac{1}{(3 \cdot 4 \cdot 34)}$ (more precisely, the diagonal of a square = $1 + \frac{1}{3} + \frac{1}{(3 \cdot 4)} - \frac{1}{(3 \cdot 4 \cdot 34)}$ of a side). Āpastamba uses it to construct a square, but he had exact ways of doing this, and I can see no advantage to using this approximation for the construction. I think he—I mean his school—was losing the meaning of what was being done. Baudhāyana has the approximation but does not use it for constructing a square.

Āpastamba, here as elsewhere (see his prescription for the gārhapatya fire altar below), appears to show a loss of meaning. If loss of meaning means younger, then this would indicate that Āpastamba comes after Baudhāyana. This accords with the prevalent view amongst Sanskrit scholars.

The only bona fide place I can see for the use of the approximation is the squaring of the circle. In effect, the priests had to get $[3/(2 + \sqrt{2})]d$. Now actually I think they knew how to solve geometrically an equation $ax = b$ (as is done in *The Elements* I. 44): there is a sūtra on this, though it's corrupt (cf. BŚulvaS 1.53, ĀpŚulvaS 3.1). But even assuming they knew this, they apparently didn't think of it when trying to get $[3/(2 + \sqrt{2})]d$. A pure surd in the denominator would not have stopped them, but they did not know how to deal algebraically with the denominator $2 + \sqrt{2}$ (i.e., to rationalize it). So the $\sqrt{2}$ in $(2 + \sqrt{2})/3$ is approximated with a rational number, and the reciprocal is arithmetically transformed. This is the source of the expression for s/d mentioned just a moment ago.

The approximation to $\sqrt{2}$ is the only clear approximation to a square root in the Śulvasūtras; though twice the 13/15 occurring in the squaring of the circle (BŚulvaS 1.60; ĀpŚulvaS 3.14; KŚulvaS 3.3) may be an approximation to $\sqrt{3}$ (cf. C. Müller, 1929, 183). Both examples occur in the context of squaring the circle.

A gnomon is the L-shaped figure obtained by subtracting from a square a smaller square having with the first a common vertex (see Fig. 10). In ĀpŚulvaS 3.9 and in *The Elements* II. 4 the gnomon is analyzed into two rectangles and a square, and the propositions amount to our rule $(a + b)^2 = a^2 + 2ab + b^2$.

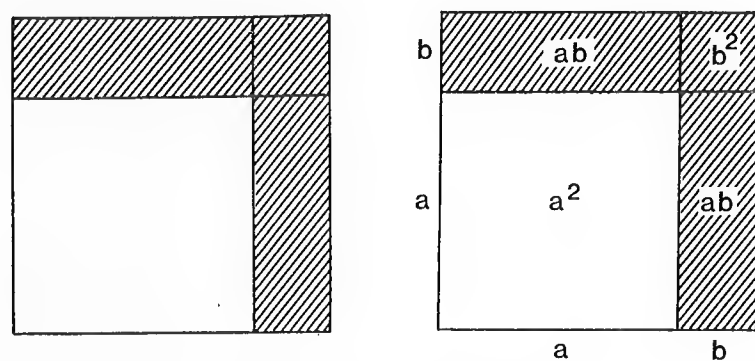


Figure 10—The gnomon

The Śulvasūtras have mainly a geometric, and not an arithmetic, character. They have, as mentioned, Theorem II.4 of *The Elements*, and they even explain that a square of side $1\frac{1}{2}$ puruṣas has area $2\frac{1}{4}$ square puruṣas, and a square of side $2\frac{1}{2}$ has area $6\frac{1}{4}$. But although they compute the area of the mahāvedi (and even explain their procedure!), they never have to apply Theorem II. 4 or ĀpŚulvaS 3.9; at least there's no visible application. The only way I can see it coming into any other part of the Śulvasūtras is in the finding of the approximation to $\sqrt{2}$. Thibaut (1875, 238–41) has already explained how, starting with $1 + \frac{1}{3} + \frac{1}{3 \cdot 4}$, and using the analysis of the gnomon, one could get the closer approximation $1 + \frac{1}{3} + \frac{1}{3 \cdot 4} - \frac{1}{3 \cdot 4 \cdot 34}$ (though he missed the point that the same method leads from $1 + \frac{1}{3}$ to $1 + \frac{1}{3} + \frac{1}{3 \cdot 4}$).

Thus ĀpŚulvaS 3.9 and $\sqrt{2} = 1 + \frac{1}{3} + \frac{1}{3 \cdot 4} - \frac{1}{3 \cdot 4 \cdot 34}$ are both parts of squaring the circle, and all three are erudition, i.e., mathematics that finds no application in the ritual.

The circulature of the square is not a practical problem; the squaring of the circle is, eventually, but not the circulature of the square. The circulature of the square arises as a purely theological problem: equivalent altars must have the same area, the area is given via rectangles, and sometimes the altar is to be circular. The reverse problem is derivative. Thus we see in an utterly clear light the ritual origin of a practical problem.

The Śulvasūtras deserve to be considered at greater length, and I have done this in "The Origin of Mathematics" (*Archive for History of Exact Sciences*, 18 [1978]).

6. THE PHILOSOPHY OF EQUIVALENCE THROUGH AREA

The philosophy, or theology, underlying the kāmya altars in the Śulvasūtras is that equivalent altars are to have the same area: with this requirement one gets the geometric problems, and without it one doesn't. Proof that this philosophy was known at the time of the Taittirīya Saṃhitā would make it quite plausible that the geometry of the kāmya altars as seen in the Śulvasūtras was also known at that time. Now the TS knows the kāmya altars, but it says nothing about their relative areas; this is the difficulty.

How far are we already from a proof? Since the Śulvasūtras refer to the TS for the kāmya altars and in TS 5.2.5.1ff. the shape and size of the basic bird altar can be recognized, the basic size of the kāmya altars was known. Furthermore, the TS knows at least one application of the Theorem of Pythagoras, the main theorem needed for the transformations of the kāmya altars. Thus the claim that the TS knows the philosophy has a great deal of plausibility to start with.

I will first try to show that the Śatapatha Brāhmaṇa knows the philosophy. Since the Brāhmaṇas can be considered as a kind of commentary on the Saṃhitās—or, more exactly, on the associated rituals—this will make it plausible that the Saṃhitās knew the philosophy, too.

The mathematics of the bird altar, especially that involved in its augmentation, is the same as that of the kāmya altars: in both one has to construct a figure similar to one given figure and equal in area to another. The object in showing that the ŚB knows the philosophy underlying the constructions of the kāmya altars is, however, not to show that it knows the mathematics of the Śulvasūtras, for we already know that; rather, the issue for the moment is simply to show that the ŚB, which does not speak of the variations in the kāmya altars, knows the philosophy of equivalence through area. Indeed, the fact that the ŚB knows the mathematics and that the bird altar looks like just a special case of the kāmya altars is another reason for thinking that the ŚB knows the philosophy.

Of the three fire altars, the gārhapatya, the āhavanīya, and the dakṣiṇāgni, the āhavanīya was a 1×1 square. The gārhapatya altar was, in one version, a circle; and the dakṣiṇāgni, a semicircle (see the "plan of the sacrificial ground," in S.B.E., 26, 475, or *Agni*, I, p. 55; see also KŚulvaS 7.37, in Khadilkar 1974, 46). According to Datta (1932, 21) and other authors (cf. Khadilkar 1974, 61f.), all three of these altars were to have equal areas, but the evidence for this assertion, and even for the equality in area

of the gārhapatya and āhavanīya altars, which would be enough for my purpose, is scanty. KŚulvaS 7.37 states the āhavanīya to be a square 24 aṅgulis on a side ($24 \text{ aṅgulis} = 1/5 \text{ of a puruṣa} = 1 \text{ aratni}$); the gārhapatya to be of radius 14; and the dakṣiṇāgni to be of radius 16. The next sūtra (7.38) states the radius of the dakṣiṇāgni to be $19 \frac{1}{2}$ and says that the dakṣiṇāgni is a "semicircular [figure] . . . of one aratni" (i.e., 1 square aratni). According to Kātyāyana's own circulature of the square (KŚulvaS 3.13), which is the same as in the BŚulvaS and ĀpŚulvaS, the circle (equal to a 24×24 square) should have a radius about $13 \frac{2}{3}$ (i.e., $1/2 \times (2 + \sqrt{2})/3 \times 24$) and the dakṣiṇāgni should have a radius about $19 \frac{1}{3}$ (i.e., $1/2 \times (2 + \sqrt{2})/3 \times 24 \times \sqrt{2}$), so the 14 and $19 \frac{1}{2}$ are approximately right (the $9 \frac{1}{2}$ in Khadilkar, p. 46, is a misprint for $19 \frac{1}{2}$). Thus Kātyāyana explicitly makes the āhavanīya and dakṣiṇāgni to be of the same area, and there are indications that all three were to have the same area. Nevertheless, the evidence from Kātyāyana is not good enough: we need evidence from the ŚB or the TS.

The tenth chapter of the Mānava Śrautasūtra (translated by J. M. van Gelder in the *Śata-Piṭaka Series*, vol. 27), is the Śulvasūtra. Here, in 1.1.7 and 1.1.8, not only are the measurements 24, $13 \frac{2}{3}$, and $19 \frac{1}{2}$ given, but furthermore the constructions themselves are given. Thus we finally have an explicit reference for the equality in area of the āhavanīya, gārhapatya, and dakṣiṇāgni.

In the ŚB (7.1.1.37) the gārhapatya is said to "measure one vyāma" (a vyāma is the same as a puruṣa). Professor Staal has translated the passage for me as follows: "It [i.e., the gārhapatya] measures one vyāma, for man measures one vyāma, and man is Prajāpati, and Prajāpati is Agni. Therefore he makes the womb equal in measure. It is circular for the womb is circular. And the gārhapatya is this world for this world is indeed circular."

The āhavanīya is square (cf. the "plan" in S.B.E., vol. 26, p. 475, or *Agni*, Volume I, inside cover). ŚB 10.2.3.1 says: "From the raised [site] of the gārhapatya he strides seven steps eastward. From there he measures off a fathom [vyāma] towards the east, and having, in the middle thereof, thrown up [the ground] for the āhavanīya, he sprinkles it with water." Thus the āhavanīya is a square one vyāma on a side.

From these two passages (7.1.1.37 and 10.2.3.1) I would like to conclude that the gārhapatya and āhavanīya have equal areas. But the question is whether ŚB 7.1.1.37 really is referring to area: Why could it not simply be saying that the gārhapatya is one vyāma in diameter? This is a difficulty, and I think one will not come, without interpretation, to an unambiguous meaning from such passages as ŚB 7.1.1.37 for the simple reason that the ritualists, unlike us, had no single word to distinguish square from linear measure. If this is so, we will forever remain one iota short of a strictly textual proof.

In the Baudhāyana Śulvasūtra we meet the same ambiguity. BŚulvaS 2.61 says: "It is the measure of a vyāyāma [a linear vyāyāma is $4/5$ of a

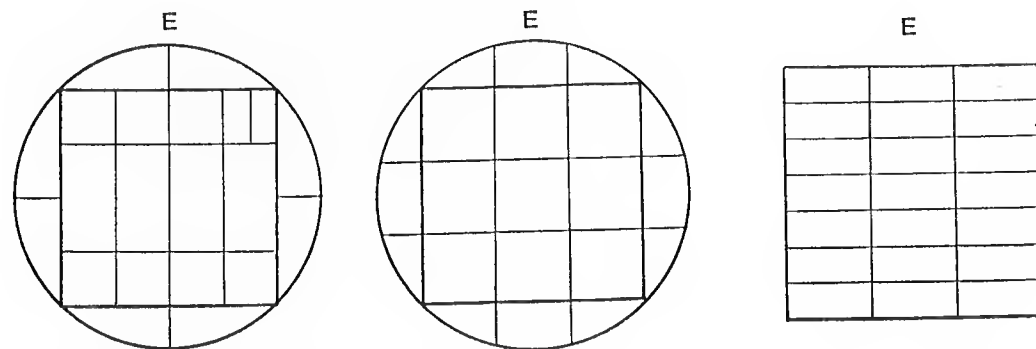
linear vyāma]; this is the tradition of the construction of the gārhapatya fire." BŚulvaS 2.62 says: "According to one opinion it has the form of a square." BŚulvaS 2.63 adds: "According to others it has the form of a circle." The commentator says (*The Pandit*, vol. 10, p. 145): "The Gārhapatya is either a square the side of which is one vyāyāma long or a circle of the same area," and Thibaut (1875, 232) agrees with him. Of course, however reliable, these are no more than interpretations of the text.

Eggeling, in his translation of ŚB 7.1.1.37, gives: "It [the gārhapatya hearth] measures a fathom [in diameter]"; but then in a footnote (p. 309) he adds: "Or rather, it is a circle corresponding in area to a square of one fathom; which gives a diameter somewhat exceeding in length a fathom." Now if he had said "or it is a circle, etc." he would simply have been calling attention to an ambiguity in the text; but when he says "or rather," I fail to follow him. Eggeling is for the most part reliable, but not when it comes to linear and square measure; he has confused the two in his handling of some vital points (see Seidenberg 1962, 508).

The Āpastamba Śulvasūtra also mentions the difference in opinion on the shape of the gārhapatya altar, though all agree that it should have the measure of a vyāyāma. In the ĀpŚulvaS, however, the circular gārhapatya is described as a circle of radius $1/2$ of a vyāyāma. Thus we find just the opposite of what we expected to find! My conjecture is that Āpastamba has misunderstood the tradition. It is, of course, futile to quarrel with the text, but we find modern students confusing linear and square measure (cf. Seidenberg 1962, 508), and it could have been the same with Āpastamba, and with more reason, since he did not possess a good vocabulary for making the distinction.

The gārhapatya and āhavanīya altars are unquestionably being considered equivalent in some sense in the ŚB. The gārhapatya is the earth, the world of men, while the āhavanīya is the sky, the world of the gods (cf. ŚB 7.3.1.10). Then the two are identified through number: the idea of equivalence, or identification, through number is explicit in the following passage from the Aitareya Āraṇyaka 1.3.5.7 (cf. S.B.E., vol. 1, p. 182): "These verses, by repeating the first three times, become 25. The trunk is the twenty-fifth and Prajāpati is the twenty-fifth. He adorns that trunk as the twenty-fifth. Now this day consists of 25, and the Stoma hymn of that day consists of 25; it becomes the same through the same, therefore the two, the day and the hymn, are 25." But the idea is of frequent occurrence and is sufficiently clear in the ŚB. In particular, ŚB 7.1.1.36 says: "Moreover, there are twenty-one enclosing stones,—twelve months, five seasons, these three worlds and that Agni from yonder [sun] as the twenty-first: the Agni he thus establishes in yonder sun. And inasmuch as he puts on those [bricks] in this way, he thereby establishes those two [the sun and the fire] in each other, and accordingly those two are established in each other; for both of them he now makes out to be the twenty-first [twenty-one-fold?],

and both of them are now here, as the Āhavanīya and the Gārhapatya.” One will note (Fig. 11) that the “new” gārhapatya (or āhavanīya) is like the “old” in having twenty-one bricks (for this terminology, see Volume I, pages 336–338). Thus the āhavanīya and the gārhapatya are being made equivalent through the number 21.



The Gārhapatya according to Eggeling The Gārhapatya according to Baudhāyana and Āpastamba The New Gārhapatya or Āhavanīya

Figure 11

The view being put forward here is that the Vedic ritualists of the time of the Śatapatha Brāhmaṇa already employed equivalence through area, and that the two altars are equivalent in that they have the same area. Now the gārhapatya measures 1 because Agni measures 1; and presumably the āhavanīya measures 1 for the same reason. Thus equivalence through a geometric measure is clear enough, even if some ambiguity as to the nature of the measure remains. Logically the ambiguity arises because a circle, like a square, is fixed by a single linear measurement. The ambiguity would not arise if one were comparing, say, an oblong with a square, since it takes *two* linear measurements to describe an oblong.

Because of the gap in the textual proof, I am persuaded to enter into a discussion of the motives underlying the invention of Vedic geometry and, in particular, of the Theorem of Pythagoras.

In the Śatapatha Brāhmaṇa we find an application of the Theorem of Pythagoras. Since an application is an effect, not a cause, we cannot expect to find a motive in such applications, even if they are ritual. Rather, I will first seek a motive for squaring the oblong.

Ritual deals with equivalences. The reason for this, I think, is that a basic notion in ritual is the identification of the sacrificer with the sacrifice, and there are some rather clear and compelling reasons why this should be done only symbolically (or through ritual action) and not actually. However that may be, equivalences prevail in ritual, and this is so especially in Vedic

ritual. We have already seen some examples, and it would be hard to open the Śatapatha Brāhmaṇa at random without finding others.

The circle and the square are dual figures. We have seen that circle : square = gārhapatya : āhavanīya = earth : sky = human : divine. Similar relations hold for the oblong and square. The Pythagoreans had ten first principles consisting of ten pairs of opposites, e.g., odd-even, male-female, and so forth; one of the pairs is square-oblong. The Vedic Indians had this same duality: oblong bricks are human, square bricks divine (cf. *The Pandit*, 10, 169).

I assume a pervasive duality in ancient thought and will not try to explain this. The duality in thought is associated with a duality in social organization (it is, I think, a result of it), and gives rise to a duplication of the ritual scene—the circle and square express this duality. Such a duality can be widely documented (cf. Seidenberg 1981), but in any event, we already have a good example: the gārhapatya and āhavanīya. In some situations the circle may have been ousted by the oblong, giving rise to a duality between oblong and square; anyway, we have this duality. The oblong and square are to be made equivalent just as are the circle and square. Thus we have a *motive* for squaring the oblong. This is the first point.

Following Baudhāyana let us cut off a square from the oblong and try to rearrange the remainder around the square (see Fig. 5). As a first step in squaring the oblong, this is about as simple-minded as one can get. The only difficulty is that one does not get a square, but a square minus a smaller square, so the problem becomes: subtract a square from a square (so as to get a square). This gives us a motive for this problem (solved, as already mentioned, in the Śulvasūtras).

In trying to subtract a square from a square, one would place the smaller square into the larger and look at the difference. This could well lead one to the contemplation of something like Fig. 12i. This figure unquestionably

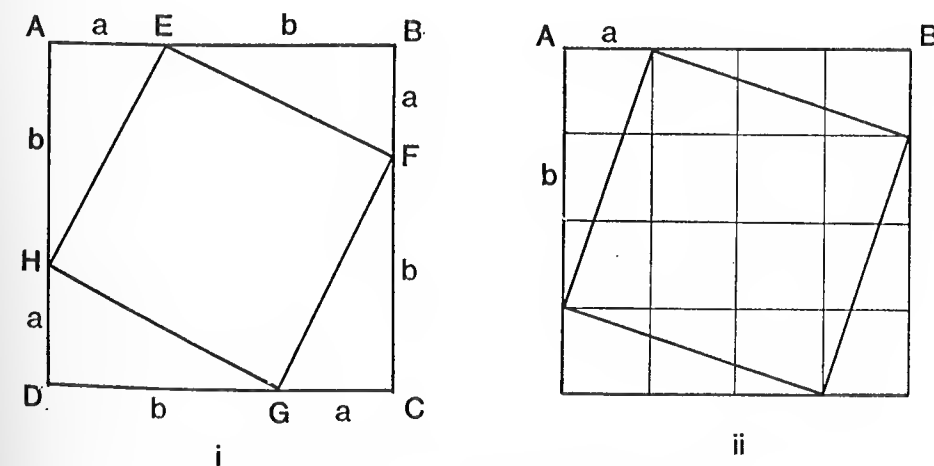


Figure 12—Subtracting a square from a square

was contemplated in ancient times. The *Chou Pei*, an ancient Chinese work, has the version in Fig. 13, accompanied by the statement: "Make the breadth . . . 3, the length . . . 4. The king yu, that is, the way that joins the corners, is 5." The text continues: "Take the halves of the rectangles around the outside, there will be (left) a kuu."

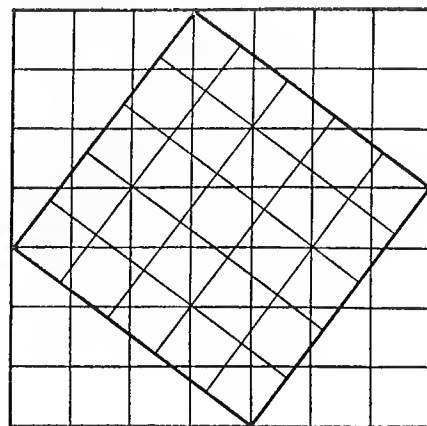


Figure 13—The "Figure of the Cord".

Once one contemplates Fig. 12i, one will soon come to the Theorem of Pythagoras. For example, if we let $a = 1$, $b = 3$ (see Fig. 12ii), then $AB = 4$, and the big square is 16. Now each triangle has area $1/2 \times 1 \times 3$, or $3/2$, and the four triangles together equal 6. So the smaller square is 10 (i.e., $16 - 6$). KŚulvaS 2.8 has this result, and one can get the result of the *Chou Pei* in the same manner. Moreover, to generalize further, call AE , a , and EB , b (see Fig. 12i). Then the big square is $(a + b)^2$, or $a^2 + 2ab + b^2$; each triangle is $ab/2$; the four together are $2ab$; so the remainder, c^2 , is $(a^2 + 2ab + b^2)$ minus $2ab$, or $a^2 + b^2$. That is, $c^2 = a^2 + b^2$. This is the Theorem of Pythagoras. The same result can be obtained purely geometrically in a similar and equally simple way.

The Theorem of Pythagoras tells us how to add a square to a square, so we seem to have lost sight of the initial problem, which was to subtract a square from a square, but once one can add two squares, it will be easy to find the difference. In this way we get the most important, and surely the most striking, of the results found in the Śulvasūtras.

If the above reconstruction is correct, the conclusion is that the geometry of the Śulvasūtras stems from the philosophy of equivalence through area. In particular it would follow that the enlargement of the bird altar is subsequent to that philosophy. Or, to put it another way, the philosophy underlying the mathematics of the kāmya altars was prior to the enlargements described in the Śatapatha Brāhmaṇa.

7. COMPARISON OF VEDIC AND OLD BABYLONIAN MATHEMATICS

It is conceivable that a secular practice should enter ritual. Now the Old Babylonians of 1700 B.C. had a purely secular mathematics, and they also had the Theorem of Pythagoras, so the next question is whether the Vedic Indians got the Theorem from them.

There are two distinct traditions easily discernible in ancient mathematics: one is constructive or geometric, the other algebraic or computational. In the first, for example, the Theorem of Pythagoras says that the square built on the diagonal of a rectangle is the sum of the squares on the sides; it is expressed with a construction in view. In the second, the theorem says that the diagonal of a rectangle is the square root of the sum of the squares of its sides; it is expressed with a computation in view. The hallmark of the first tradition is the absence of numbers (except for small positive whole numbers). Anyone who has taken our usual high-school courses in mathematics will recognize the geometry courses as belonging to the first tradition, the algebra courses as belonging to the second.

Van der Waerden—and, in less detail, Neugebauer—explain the absence of number in Greek, or Pythagorean, geometry as follows. Originally the Old Babylonians had what we would call a naive approach to number and magnitude: they assigned numbers to lengths in the expected way. Their numbers are what we call *rational*, that is, they are the quotients of whole numbers. Now $\sqrt{2}$ is not, as we know, rational; but the Old Babylonians simply took a rational approximation (much as we do when we use 1.414 for $\sqrt{2}$). The Greeks on the other hand found that the diagonal of a unit square (to which we assign $\sqrt{2}$) and its side have no common measure, i.e., there is no segment going evenly into both the side and the diagonal. Defining number as (positive) whole number and adhering strictly to the definition, the Greeks could not get a logical grasp through number on the diagonal of a unit square. Now the Old Babylonians could solve quadratic equations. This knowledge, according to the theory, was taken over by the Pythagoreans, who, however, could not solve the equation $x^2 = 2$ in the domain of numbers, even if they had allowed themselves rational numbers or some logical equivalent. But they could solve that equation, and more general quadratic equations, in the domain of geometric magnitudes. Thus it was logical necessity that forced the Pythagoreans to go over to the geometric formulation (thus creating the so-called geometric algebra). Number was expunged from geometry.

Van der Waerden's (and Neugebauer's) theory is built on many acute observations, but it simply cannot be maintained in its present form, since, as we have seen, the Vedic Indians had geometric algebra before the advent of Greek mathematics.

Let us compare Old Babylonian and Vedic, or Vedic and Greek, mathematics. This is not the place to go into Babylonian mathematics, but what

we have already mentioned will be ample, and the basic point is that the dominant aspect of Old Babylonian mathematics is its computational character. Consider, then, the Theorem of Pythagoras under two aspects corresponding to the two formulations given above: in aspect 1 the theorem is used to construct the side of a square equal to the sum or difference of two squares; in aspect 2 the theorem is used, say, to compute the diagonal of a rectangle. Aspect 2 comes in, for example, when one uses the (3,4,5) triangle to construct a right angle. The Śulvasūtras know both aspects and so does the Śatapatha Brāhmaṇa. The Taittirīya Saṃhitā at least knows aspect 2, which comes in when constructing a right angle with the Theorem; the discussion of the kāmya altars also made it plausible that it knew aspect 1. The *Elements* has only aspect 1, but the Greeks knew aspect 2, as well, since they had Pythagorean number triples. Now the Old Babylonians had aspect 2, but they would have had no use for aspect 1: they would simply square the lengths of the sides of the given squares, add, and take the square root.

Or consider the problem of converting a rectangle into a square. In India and Greece this is done geometrically, as explained. The Old Babylonians would have had no use for such a procedure: they would simply multiply the two sides and take the square root.

One could give further common elements of the Greek and Indian mathematics not shared by Old Babylonian—for example, the gnomon or the problem of squaring the circle. The Old Babylonians know the rule $(a + b)^2 = a^2 + 2ab + b^2$ (which is the arithmetic content of *The Elements* II. 4 and ĀpŚulvaS 3.9), but they do not have the gnomon (though it is reasonable to conjecture that they once did). The squaring of the circle is a true geometrical problem in Greece and in India; in Babylonian either it does not exist or is to be considered trivially solvable: the circle there has area $3r^2$ and the side of the required square is $\sqrt{3} r$.

Conclusion: the geometric algebra of Greece and of India have a common source different from Old Babylonian of 1700 B.C.

For a reason that will appear in a moment, let us consider Fig. 5, the figure for BŚulvaS 1.54. Let the given oblong have sides x and y , with x the longer side. Then the small square has side $(x-y)/2$ and the large, $(x+y)/2$; so we get the identity $xy = [(x+y)/2]^2 - [(x-y)/2]^2$. The Old Babylonians knew this identity, but did not have the corresponding geometrical figure.

Now let us consider some of the common elements in the Old Babylonian and Vedic mathematics. Becker and Hofmann (1951, 39–41) accept a date before 600 B.C. for the Theorem of Pythagoras in India. They therefore look to Babylonian for the source. But they need to get aspect 1, and Old Babylonian didn't have it. Could it be that India got aspect 2 from Old Babylonian and transformed it into aspect 1? For Greece we have a theory (namely, Neugebauer's and van der Waerden's) as to why this might have happened, but no one has ever suggested any such thing for India, and I don't see how it could have happened. Aspects 1 and 2 are but two aspects

of the same thing, and the Śulvasūtras know this. The conclusion is that Old Babylonian got the Theorem of Pythagoras from India or that Old Babylonian and India got it from a third source. Now the Sanskrit scholars do not give a date for the geometrical rituals in question as early as 1700 B.C. Therefore I postulate a pre-Old Babylonian (i.e., pre-1700 B.C.) source for the kind of geometric rituals we see preserved in the Śulvasūtras, or at least for the *mathematics* involved in these rituals.

Old Babylonian and Vedic mathematics both appear to know the identity $xy = [(x+y)/2]^2 - [(x-y)/2]^2$; this identity is basic to the Old Babylonian treatment of quadratic equations, and its counterpart, *Elements* II.5–6, was used similarly by the Pythagoreans (see van der Waerden 1961, 188–124). In India it is not used for arithmetical purposes, but it is surely close to the surface in the construction from Baudhāyana mentioned a moment ago. Moreover, the Kātyāyana Śulvasūtra 6.5 gives the following construction for a square of n units. Take a line segment $AB = (n-1)$ -units (see Fig. 14) and form an isosceles triangle ACB with $AC + CB = (n+1)$ -units. Then the "arrow" DC is the side of the desired square. This even looks like an arithmetico-geometric application of the formula for $x = n$, $y = 1$. (Note the term "arrow," which was used in a similar, though not quite identical, way at Susa in the Old Babylonian period; see Seidenberg 1972, 181, n. 17.)

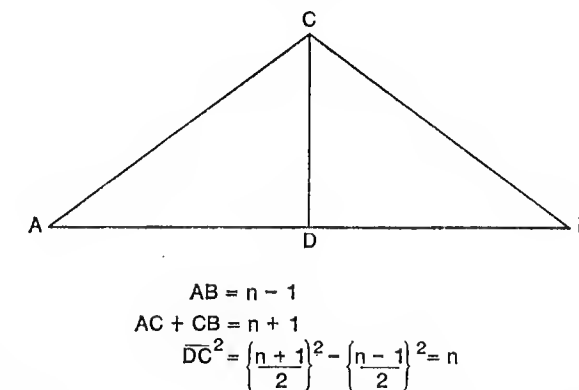


Figure 14—Construction of a square of area n

Now this identity is a definite part of geometric algebra, so it follows that the postulated source knew this. Or, in other words, the Old Babylonians got this identity from a setup *like* that found in the Śulvasūtras, but, of course, from a pre-1700 B.C. source.

Conclusion: the geometrical construction of a square equal to a given rectangle taught in *The Elements* II.14, which is based on II.5 or 6 and on the Theorem of Pythagoras, must have been known to a pre-1700 source, on which the Pythagoreans, the Old Babylonians, and the Śulvasūtras depended.

The implication of these observations for Old Babylonian mathematics,

and for mathematics in general, is elaborated in my paper "The Origin of Mathematics" mentioned above. The main idea is that the ritualists, because of their difficulties in trying to square the circle, in the course of which they learned how to take a square root, went over to arithmetic methods. There was a split: one side expanded the arithmetic methods, pushing aside the old geometric constructions; the other side insisted on maintaining the constructions. This explains, among other things, why aspect 1 is lacking in Old Babylonia. For us the important conclusion is that the mathematics we see in the Śulvasūtras already existed before 1700 B.C.

8. AGE OF THE VEDIC GEOMETRICAL KNOWLEDGE

The position we have now reached is that the geometry of the Pythagoreans and of the Vedic Indians have a common source, and that the mathematics of Old Babylonia is derivative. This suggests a source in the neighborhood of Old Babylonia somewhat before 1700 B.C., and hence that the Vedic Indians, who are supposed to have invaded India around 1500 B.C., brought the geometric rituals in with them. The place to look for evidence that the invading Aryan nomads had such rituals is the R̥gveda, which is supposed to reflect the culture of these nomads. The R̥gveda has not been mentioned earlier in this discussion because the evidence is scanty indeed and could not advance the argument logically. One learns in 1.67.10 (incorrectly given by Bürk 1901, 544, as 1.67.5) that "skillful men . . . measure out . . . the seat" of the agni, or, as freshly translated for me by Professor Staal: "Like experts a house, they have made it, measuring equally." But this is about as definite as one can get. It is better first to establish that the mathematics existed before 1700 and let this bear on the question of whether the invading nomads had the geometric rituals.

Aside from RV 1.67.10, there are some poetic references to measurements that it may be well to mention here. Thus RV 1.160.4 says that "the skillfulest among the skillful gods . . . measured out the two realms" of heaven and earth. RV 1.159.4 is similar and adds: "The enlightened seers are forever stretching a new string to the heaven in the sea." RV 3.38.3 says that "they made both [heaven and earth] equal in measure . . ." RV 6.8.2 says that Agni "measured out the air space"; and 10.121.5 is similar. (Cf. K. F. Geldner, *Der Rig-Veda*.) For some other instances, especially RV 8.42.1; 8.41.10; 10.5.3; and 10.61.2, see Gonda (1959, 168), where remarks on the root *mā-*, often translated by verbs of "measuring off," are made. (See also RV 10.71.11.)

It has previously been mentioned that the altars were made of five layers of bricks, each layer being of 200 bricks. A large part of the Śulvasūtras is taken up in describing the shapes of the bricks and the positions in which they are to be placed. Now H. S. Converse, in her paper "The Agnicayana

Rite: Indigenous Origin?" (1974, 81-95) has put forward the thesis that it *is* indigenous. One of her arguments is that the R̥gveda has no word for brick! The conclusion is that the invading Aryans had no bricks and hence got their bricks from an indigenous source, namely, the Harappans (or the Indus River Valley Civilization). Hence, too, arises the thought that they may have gotten their geometry from the same source. This argument, that the invading nomads did not have bricks, will, however, have to come to terms with Professor Staal's observation that the Vedic Indians and the Iranians both had the same root, *iṣṭ-*, for brick (see Volume I, page 132).

It is generally held that the Harappan civilization is a derivative of Babylonia, at least at its inception. The date of this inception is given by archeologists (e.g., Wheeler) as about 2500 B.C., and it was on the decline by 2000 B.C. Assuming that we have to go back to about 2200 for the geometry, and considering that the predecessors of the Old Babylonia of 1700 knew this geometry, the conclusion would be that Old Babylonia and Harappa shared their geometry; setting aside Greece and the Vedic Indians for a moment, there would be no way to decide between Babylonia and Harappa as the ultimate source.

A surmise is that the Greeks and the Vedic Indians got their geometry from a common source (and perhaps even that their common ancestors had it), whereas the above suggests that the Vedic Indians got *their* geometry from Harappa and the Greeks theirs from Old Babylonia, a somewhat conflicting conclusion.

Actually, we know very little about the Harappans: they made free use in their decorative art of squares inscribed in compass-drawn circles (or circles circumscribing squares), but this is the extent of our information on their geometry. (Cf. Childe 1946, 121).

An examination of the material on the bricks will show, however, that none of the theorems we have spoken about, except that of constructing a rectangle, is tied up with the bricks. The statement or implication that bricks of specified shapes can be assembled into a figure of specified shape does indeed involve some mathematics, but beyond that it is all only implicit in the Śulvasūtras; and even this implicit mathematics is for the most part contained in the other parts of the Śulvasūtras. Now the R̥gveda often compares Agni to a bird, and in 1.58.5; 1.96.6, and 6.2.8, Agni is *called* a bird (cf. *Der Rig-Veda*). The *vedi* is explicitly mentioned, as in 1.164.35; 1.170.4; 5.31.12; 7.35.7; and 8.19.18. Thus 1.164.35 says: "The *vedi* is the outermost limit of the earth; this offering is the navel of the world." (The notion of the ritual scene as the earth is of widespread distribution, and in particular occurs in the Śatapatha Brāhmaṇa, for example, in 1.2.5.7.) So even assuming there were no bricks, we can still easily enough imagine the altar being outlined in the form of a bird and the whole being enclosed in a quadrilateral, perhaps a trapezoid. Once this figure is drawn (cf. Fig. 2) and the requirement placed that it be augmented by a square *puruṣa* while retaining the

shape, most of the Vedic geometry comes into play, bricks or no bricks.

BŚulvaS 2.82 says: "After having constructed the agni consisting of 3000 bricks (i.e., the third time) the sacrificer is to construct the candaścit (i.e., the agni consisting as it were of mantras instead of iṣṭakās [i.e., bricks])." As Thibaut informs us, "The shape of the agni is drawn on the ground and then the whole ceremony of the agnicayana is gone through, but instead of placing bricks on the ground the sacrificer only touches the places on which they would be placed and mutters at the same time the appropriate mantras." Of course, here a simplification is being described, but it gives pretty much the image being projected.

The three fire altars (the gārhapatya, the āhavanīya, and the dakṣiṇāgni) are mentioned in RV 5.11.2, though not by name.

So it looks as though we are getting everything but the bricks in Ṛg-vedic times: the vedi, the bird-shaped agni, the three fires, and the "skillful men."

In view of these facts, it still looks to me as if the invading Aryans brought the geometrical rituals in with them, and I retain the impression that the Greeks and the Vedic Indians got their geometry from a common source, perhaps their common ancestors.

In an earlier paper (Seidenberg 1962) I cited RV 10.90, which says that "Puruṣa is thousand-headed, thousand-eyed, thousand-footed," and I added that "this means either that at the time of the Ṛgveda there already existed the thousand-brick altar; or, possibly, that the altar was, for some reason we do not know, conceived of as thousandfold, and this led to the thousand bricks." Now, of course, if there were no bricks, we have to take the second alternative. The question remains: What did the Ṛgveda mean by saying that Puruṣa is thousandfold? And what is the source of the "thousand"?

It is known that the early Hindus and Persians called themselves "Aryans," spoke closely related (so-called Indo-Iranian) languages, and shared cultural features not found elsewhere in the Indo-European family (cf. Staal in Volume I, p. 93). It is plausible to suppose, as has been done, that the Vedic Indians and the Iranians were once a single people. According to Professor Staal, "The Iranian fire ritual is in many respects similar to the Vedic. Fires were installed on three altars. The domestic altar is circular, the sacrificial, square." This suggests that the parent group already had the three fire altars, which in turn agrees with the evidence from the Ṛgveda (5.11.2) mentioned above. In the Persian Zend-Avesta (Vendidad, chap. 2) the earth, because it can no longer hold all "small and large cattle, men, dogs, birds, and red flaming fires," is increased after periods of three hundred, six hundred, and nine hundred years to a specified fraction more than it was before, with "instruments." If one considers myth to be a counterpart of rite, this suggests that Iranians once had geometrical rituals, and that the Vedic Aryans and the Iranians got their geometric rituals from their common an-

cestors. This is in conformity with the surmise that the Vedic nomads brought the geometric rituals in with them.

Neugebauer (1962, 28f.) says: "For the Old Babylonian texts no prehistory can be given. . . . All that will be described in the subsequent sections is fully developed in the earliest texts known." No one can say with any confidence, or at any rate with reference to the evidence, that the Old Babylonian mathematics of 1700 B.C. was not known a thousand years earlier to the Sumerians. If it was, then by the arguments given the geometrical knowledge of the Śulvasūtras goes back that far, too.

Note. Professor van der Waerden has now put forward the thesis that mathematics was invented by the Indo-Europeans before their dispersal, between about 3500 and 2500 B.C. Cf. "Pre-Babylonian Mathematics", I and II, *Archive for History of Exact Sciences*, 23 (1980).

REFERENCES

- Ball, W. W. R. (1901) *A Short Account of the History of Mathematics*. 3rd ed. London.
 Becker, O., and J. E. Hofmann (1951). *Geschichte der Mathematik*. Bonn.
 Bell, E. T., (1940). *Development of Mathematics*. New York.
 Bürk, A. (1901, 1902). "Das Āpastamba-Śulva-Sūtra." *Zeit. d. deutschen morgenländischen Ges.*, 55, 56.
 Cajori, F., (1929). *A History of Mathematics*. New York.
 Cantor, M. (1877). "Gräko-indische Studien." *Zeit. f. Math. u. Physik (Hist.-lit. Abt.)*, 22.
 _____. (1904). "Über die älteste indische Mathematik." *Archiv. d. Math. u. Phys.*, 8.
 _____. (1907). *Vorlesungen über Geschichte der Mathematik*. Vol. 1. Leipzig.
 Childe, V. G. (1946). *What Happened in History?* New York.
 Converse, H. S. (1974). "The Agnicayana Rite: Indigenous Origin?" *History of Religion*, 14.
 Datta, B. (1932). *The Science of the Śulba*. Calcutta.
 Geldner, K. F. (1951-57). *Der Rig-Veda*. Harvard Oriental Series, vols. 33-36. Cambridge, Mass.
 Gonda, J. (1959) *Four Studies in the Language of the Veda*. The Hague.
 Heath, T. (1956). *The Thirteen Books of Euclid's Elements*. 3 vols. New York.
 Keith, A. B. (1910). Review of von Schroeder's *Kāṭhaka Saṃhitā*. *J. Royal Asiatic Soc.*
 Khadilkar, S. D. (1974). *Kātyāyana Śulba Sūtra*. Poona.
 The Mānava-Śrautasūtra. Translated by J. M. van Gelder. The Śata-Piṭaka Series, vol. 27. New Delhi, 1963.
 Mazumdar, N. K. (1922). "Mānava Śulva Sūtram." *J. Dept. of Letters, Calcutta Univ.*, vol. 8.
 Müller, C. (1929). "Die Mathematik der Śulvasūtra." *Abhandlungen aus der Math. Seminar d. Hamburg Univ.*, vol. 7.
 Neugebauer, O. (1928). "Zur Geschichte des Pythagoräischen Lehrsatzes." *Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen (Math.-Phys. Klasse)*.

- _____. (1935). "Mathematische Keilschrift-Texte." *Quellen u. Studien zur Geschichte d. Math. Astr. u. Phys.* Abt. A. 3.
- _____. (1962). *The Exact Sciences in Antiquity*. 2nd ed. New York.
- Renou, L. and Filliozat, J. (1947) *L'Inde classique*. Vol. I. Paris.
- The Śatapatha Brāhmaṇa. Translated by J. Eggeling. The Sacred Books of the East. Vols. 12, 26, 41, 43, 44. Oxford. 1882-1900.
- Seidenberg, A. (1962). "The Ritual Origin of Geometry." *Archive for History of Exact Sciences*, 1.
- _____. (1972). "On the Area of a Semi-Circle." *Archive for History of Exact Sciences*, 9.
- _____. (1978). "The Origin of Mathematics." *Archive for History of Exact Sciences*, 18.
- _____. (1981). "The Ritual Origin of the Circle and Square." *Archive for History of Exact Sciences*, 25.
- The Taittiriya Saṃhitā. Translated by A. B. Keith. Harvard Oriental Series, vols. 18, 19, Cambridge, Mass. 1914.
- Thibaut, G., (1874-77). "Śulvasūtra of Baudhāyana." *The Pandit*, 9, 10, n.s. 1.
- _____. (1875). "On the Śulvasūtras." *J. Asiatic Soc. Bengal*, 44: no. 1.
- _____. (1882). "Kātyāyana's Śulbapariśishta." *The Pandit*, n.s. 4.
- _____. (1899). *Astronomie, Astrologie und Mathematik* (in *Grundriss d. Indo-Arischen Philologie u. Alter.*, 3: 9). Strassburg.
- van der Waerden, B. L.. (1961). *Science Awakening*. 2nd ed. Groningen.
- Weber, A. (1884). Review of L. von Schroeder's "Pythagoras und die Inder." *Literarisches Zentralblatt*, 35.

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RITUAL STRUCTURE

Frits Staal

THE NUMEROUS RITES OF THE Agnicayana do not follow each other haphazardly or at random; their succession has a structure. This structure is explained and made explicit by the śrauta sūtras, and it is the purpose of this essay to describe its most salient features.

The simplest structure that a sequence or succession of events or activities can have is a *linear structure*. This involves four relationships: "precedes," "follows," "immediately precedes," and "immediately follows." Let us adopt the convention that a ritual *A* consists of a sequence of rites a_1, \dots, a_n , where $1, \dots, n$ are natural numbers. These four relationships of succession may then be defined as follows:

- a_i precedes a_j if and only if $i < j$;
- a_i follows a_j if and only if $i > j$ (or a_j precedes a_i);
- a_i immediately precedes a_j if and only if a_i precedes a_j , and if there is no k such that $i < k < j$;
- a_i immediately follows a_j if and only if a_j immediately precedes a_i .

From these definitions it is clear that the four relationships are not independent of each other. We can select any of the four as a basic relationship and define the three others in terms of it. All these relationships occur in the Agnicayana. For example:

- the Consecration (dikṣā) precedes the Introductory Offering (prāyañīyeṣṭi);
- the Introductory Offering follows the Consecration;
- the adhvaryu's *o śrāvaya* immediately precedes the agnīdh's *astu śrauṣaṭ*;
- the agnīdh's *astu śrauṣaṭ* immediately follows the adhvaryu's *o śrāvaya*;

That such relationships occur may seem obvious. However, it is necessary to state it, for these simple relationships are presupposed by other, more complex relationships.

Some rites or recitations occur both at the beginning and again at the end of a ritual or rite. For example, at the beginning and end of each consecration of a layer of the Agni altar, the adhvaryu recites TS 5.7.9.1 a and TS 5.7.8.1 a. Let us refer to these recitations together as *A*. Let us refer to all the intervening recitations as *B* (these are different on each layer). Then, for each layer, the recitations exhibit the following structure:

ABA

This is also the structure of the cyclical pattern "odana-interval-odana" described by Heesterman (above, pages 88–90).

In these cases we have an identical element at the beginning and at the end of a rite. There are more numerous cases where the activities at the beginning and end of a rite are related to each other but are not identical. Hubert and Mauss (1909) drew attention to some facts that are well known to ritualists, viz., that in the Agniṣṭoma the final bath (avabhṛtha) at the end corresponds to the consecration at the beginning, and the concluding offering (udayaniyeṣṭi) similarly corresponds to the introductory offering, the departure (udavasāna) to the entrance (adhyavasāna), the dissolution (sakhyavisarjana) to the alliance (tānūnaptra), and so forth. In all these cases, a large number of rites and rituals intervene between these initial and final rites. However, if we look at smaller units, we often find the same structure, and the intervening portion is correspondingly clarified. For example, within an iṣṭi the main oblation (pradhānahoma) is preceded by ājyabhāga oblations and followed by a sviṣṭakṛt oblation. The ājyabhāgas are in turn preceded by fore-offerings (prayāja), and the sviṣṭakṛt is in turn followed by after-offerings (anuyāja). In the Soma sacrifices each śastra recitation is preceded by puroruc and followed by ukthavīrya. The puroruc is in turn preceded by āhāva, and the ukthavīrya is followed by śastradoha. Similarly, there are recitations preceding and following each stotra chant. These examples can be extended almost indefinitely.

The main oblation of an iṣṭi and the śastra recitation each function as middle for two pairs of initial and final acts. The sequence in which the two initial rites or recitations occur is reversed or mirrored in the two final rites or recitations. This is the general structure that emerges when these initial and final patterns overlap or interfere with each other, and it can be applied to the larger units considered before. Let us represent five specific initial rites by A_1, \dots, A_5 . They occur in the following order at the beginning of the Agniṣṭoma or Agnicayana:

- A_1 introductory procession
- A_2 adhyavasāna
- A_3 dikṣā
- A_4 prāyaṇīyeṣṭi
- A_5 tānūnaptra

Now let us denote each corresponding final rite by the same symbol, adding an asterisk, as follows:

- A_1^* return home
- A_2^* udavasāna
- A_3^* avabhṛtha

- A_4^* udayaniyeṣṭi
- A_5^* sakhyavisarjana

The order in which these rites are gone through in the Agniṣṭoma is in fact the following:

$$A_1 A_2 A_3 A_4 A_5 \dots A_5^* A_4^* A_3^* A_2^* A_1^*$$

This suggests a tendency, not quite successful, to establish the regular "mirror-image" pattern, viz.:

$$A_1 A_2 A_3 A_4 A_5 \dots A_5^* A_4^* A_3^* A_2^* A_1^*$$

All these nesting or self-embedding structures can be represented by recursive rules of the following form:

$$(1) \quad B \rightarrow ABA$$

This generates structures $AABAA, AAABAAA, AAAABAAAA, \dots$ by applying the rule again and again to its own output.

The occurrence of such *recursive* rules, viz., rules that generate infinitely many structures by applying and reapplying finite mechanisms (in our case, one single operation) is significant, for it shows that the ritual can be extended indefinitely. We have drawn attention to this fact in the General Introduction (Vol. I, page 17), and the Indian theorists were clearly aware of it. The ritualists constructed rituals of indefinitely increasing complexity, the sattra rituals. These rituals are often purely theoretical, but this does not diminish their significance as both actual and possible rituals exhibit ritual structure. Hillebrandt did not take these theoretical rituals seriously: "Diejenigen Sattra's, welche länger als zwölf Jahre dauern, heissen mahā-sattra's . . . und hier versteigt sich Mythos und Phantasie der Yājñika's zu den sechsendreissigjährigen Opfern der Sāktya's, den hundertjährigen der Sādhyā's, den tausendjährigen der Viśvasṛj" (Hillebrandt 1897, 158). The Indian grammarian Patañjali, on the other hand, took these rituals quite seriously, because he detected in them the same recursiveness that governs the structure of language. When discussing the infinity of language, which grammar must describe by finite means (cf. Staal 1969, 501–502 = 1976, 104–105), Patañjali refers to these sattra rituals: "There are indeed linguistic expressions which are never used. . . . Even though they are not used, they have of necessity to be laid down by rules, just like protracted sattras" (*santi vai śabdā aprayuktāḥ . . . yady apy aprayuktā avasyaṃ dirghasattravallakṣaṇanānuvidheyāḥ*; *Mahābhāṣya*, Kielhorn, ed., I, 8,23; 9,15).

The indefinite complexity of the Vedic rituals is not due solely to the recursive rule we have just considered, but primarily to two others. The

first of these may be called *inserting* or *embedding*. Its operation is observed most easily when different rituals are compared with each other. We have seen, for example, that the different Soma rituals differ from each other by the insertion of an increasing number of Soma sequences: the Agniṣṭoma is defined by twelve such sequences, the Ukthya by inserting another three, the Ṣoḍaśi by inserting one more, and the Atirātra by inserting another thirteen, bringing the total to twenty-nine. Similarly, the Agnicayana may be distinguished from the Agniṣṭoma by inserting numerous new ceremonies. In the course of the description of the Agnicayana, we have come across specific examples of such insertions or embeddings. Here are three:

(1) (See Table 4, page 311). The Sāmidhenī verses of the Animal Sacrifice differ from those of the Full and New Moon Ceremonies by embedding two additional verses, viz., RV 3.27.5–6. One of the embedded ceremonies that characterize the Agnicayana is the Animal Sacrifice for Vāyu. In this sacrifice, according to Baudhāyana, another eleven verses are embedded in the Sāmidhenī verses, bringing the total to twenty-four.

(2) (See Table 5, page 386). There are three rituals that are embedded in the Agniṣṭoma and help to transform it into the Agnicayana: Measurement of the Agnikṣetra; Construction of the New Domestic Altar; and Setting up of the Agnikṣetra.

(3) (See Episode 31, page 683). The Āśvina śastra is built from the Morning Litany (prātarānuvāka) by inserting and omitting numerous mantras and groups of mantras. This is one of the few cases in which omitting and inserting occur together. In general, omitting is merely the reverse of inserting: just as the Agnicayana can be thought of as arising from the Agniṣṭoma by inserting, the Agniṣṭoma can be thought of as arising from the Agnicayana by omitting.

All these insertions operate at different levels, and apply to large as well as small units. Insertions are made into other insertions, and here their recursive character becomes apparent. If we take a closer look at these insertions within insertions, we shall find the second recursive rule referred to before, which constitutes a second principle that contributes to the indefinite complexity of the Vedic ritual.

Let us start with the Animal Sacrifice for Vāyu. Call it *B*. It is inserted in the Agnicayana after the Ritual Preparation of the Ukhā Pots (*A*) and before the Election of the Priests (*C*). The ritual rule that effects this insertion may therefore be written as:

$$(2) \quad AC \rightarrow ABC$$

Now let us consider the internal structure of the Animal Sacrifice (*B*). Confining our attention to the Sāmidhenī verses, which I shall call *E*, it consists of various rites preceding these verses, which may be lumped together and referred to as *D*, and various rites following them, together referred to as

F. Thus the Animal Sacrifice *B* may be represented by *DEF*, or, if the same type of rule as in (2) is used:

$$(3) \quad B \rightarrow DEF$$

In an Animal Sacrifice, there are thirteen Sāmidhenī verses, as we have seen; the *E* in (3), therefore, consists of thirteen such verses. We also know, however, that the Animal Sacrifice for Vāyu, which occurs in the Agnicayana, should contain (according to Baudhāyana) twenty-four Sāmidhenī verses. This group, which may be called *G*, arises from *E* by inserting another eleven mantras, i.e., by an insertion similar to the insertion represented by (2). It would not be appropriate, however, to express this insertion by a rule of the form:

$$(4) \quad E \rightarrow G$$

This would indicate that in *all* Animal Sacrifices there are twenty-four Sāmidhenī verses. We have to express that *E* is replaced by *G* only in the Animal Sacrifice that is embedded in the Agnicayana. In other words, we must restrict the context, or the configuration in which *E* occurs and which conditions its replacement by *G*. The simplest way to do this is by a rule of the form:

$$(5) \quad \begin{array}{c} A \ B \ C \\ \diagdown \quad \diagup \\ D \ E \ F \end{array} \Rightarrow \begin{array}{c} A \ B \ C \\ \diagdown \quad \diagup \\ D \ G \ F \end{array}$$

This rule is formulated with the help of a double arrow to distinguish it from the rules with single arrows such as (2)–(4). Rules of the form (5) may be called *transformations*, adopting the name they are given in linguistics.¹

Transformational structures are typical of Vedic ritual, and it is easy to provide other examples. Let *A* denote ceremonies preceding the consecration, *B* the consecration, and *C* ceremonies following the consecration. The prototype of *B* in the Agniṣṭoma consists of a sequence of rites, beginning with the consecration iṣṭi (dikṣāniyeṣṭi), that will be referred to as *D*. This is followed by the ceremonies with the antelope skin, the mekhalā rope, the turban, and so forth (*F*). In the Agnicayana, between *D* and *F* new rites are inserted relating to the ukhā pot, in which fire originates (*G*). In other words, a rule of the form (6) applies:

$$(6) \quad \begin{array}{c} A \ B \ C \\ \diagdown \quad \diagup \\ D \ F \end{array} \Rightarrow \begin{array}{c} A \ B \ C \\ \diagdown \quad \diagup \\ D \ G \ F \end{array}$$

¹ In linguistics, rules of the form (2)–(4) are called phrase-structure rules.

Actually, D itself is also transformed. It is replaced by a new rite called agnidīkṣanīyeṣṭi, or D^* . A transformation must apply that is of the form:

$$(7) \quad \begin{array}{c} A \ B \ C \\ \diagdown \quad \diagup \\ D \dots \end{array} \Rightarrow \begin{array}{c} A \ B \ C \\ \diagdown \quad \diagup \\ D^* \dots \end{array}$$

Another example is the Carrying Forth of Agni (agnipraṇayana; B). It follows oblations to Viśvakarman on the domestic altar (A) and is followed by Adhvāra oblations on the offering altar (C). The prototype of the Carrying Forth in the Agniṣṭoma consists of the transportation of the fire by the adhvaryu, recitations by him and by the hotā, and chants by the prastotā (D). Afterwards the fire is installed on the altar (F). In the Agnicayana, another recital is inserted, viz., the recitation by the second hotā or maitrāvaruṇa of the Song to the Irresistible Warrior. If this is referred to as G , the expression (5) expresses the structure again adequately, but it should be understood that DGF does not represent a simple sequence of three rites, but a combination in which some of the rites overlap or are simultaneous.

In the Final Bath (avabhṛtha) there is also the insertion of a new rite, characterized by the recitation of TS 4.6.2.6 r. This can be described by a structure of the form (6).

In these transformations the context is specified on the left and on the right; in other words, both the following and the preceding ceremonies are specified. Sometimes it is more natural to leave one side unspecified, or to regard it as empty. We might refer to this as the prefixing, suffixing, or mere "adding" of rites. For example, in the Full and New Moon Ceremonies the Formulas of Completion (samīṣṭayajus; A) consist of two mantras, TS 1.1.13.3 u-v. In the Animal Sacrifice, A follows the final oblations (C) and precedes the burying of the heart-spit (D). But in this sacrifice the two formulas A are replaced by three (A^*), or:

$$(8) \quad C \ A \ D \rightarrow C \ A^* \ D$$

In the Agniṣṭoma the context is specified differently, as $C^* \dots D^*$, and another nine formulas (B) are added:

$$(9) \quad C^* \ A^* \ D^* \Rightarrow C^* \begin{array}{c} A^* \\ \diagdown \quad \diagup \\ A^* \ B \end{array} D^*$$

In the Agnicayana in a context $C^{**} \dots D^{**}$, another nineteen mantras (E) are added:

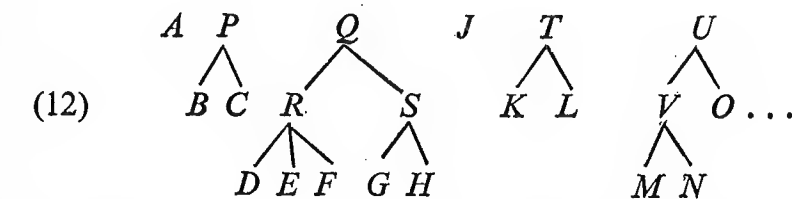
$$(10) \quad C^{**} \begin{array}{c} A^* \\ \diagdown \quad \diagup \\ A^* \ B \end{array} D^{**} \Rightarrow C^{**} \begin{array}{c} A^* \\ \diagdown \quad \diagup \quad \diagup \\ A^* \ B \ E \end{array} D^{**}$$

Such sequences of mantras can be extended indefinitely.

What is the significance of these structures? They show that an apparently empiricist and purely behaviorist description of the sequence of acts of the Agnicayana, A, B, C, D, \dots , as if they had a linear structure (11), is inadequate:



Underlying the sequence A, B, C, \dots there is in fact a hierarchical structure arrived at through the reiterated operation of embeddings and transformations, viz., something of the form:



In the description of the performance in Volume I we have implicitly accepted that it has a structure of the form (12). This idea underlies the subdivision into episodes and smaller units, described in varying detail, and the references to prototypes of the iṣṭi, the Agniṣṭoma, and other components. For example, we have not described rites such as B as merely "following" A , which corresponds to the structure expressed by (11). Rather, we have described B as the first rite of a ritual P , which corresponds to the structure expressed by (12). Thus, the agnidīkṣanīyeṣṭi is not described as merely following the rites described in Episode 3, but as constituting the first rite of Episode 4, the consecration (dīkṣā) (see volume I, pages 317–318).

The Indian ritualists have always stressed the hierarchical structure of the ritual, as have Caland and other Western scholars. As we have seen, the śrauta sūtras describe the main rituals in a particular order. This is connected with several facts. Higher rituals in the hierarchy, or later rituals in the list, are not only more complex, but also less common. A person is in general only eligible to perform a later ritual if he has already performed, or continues to perform, the earlier ones. All this has to be borne in mind when we note that Baudhāyana, for example, describes some of the rituals in the following order:

darśapūrṇamāsa, "Full and New Moon Ceremonies"
ādhāna, "Installation of the Fire"
paśubandha, "Animal Sacrifice"
cāturmāsya, "Seasonal Ceremonies"

PART III PERSPECTIVES

agniṣṭoma, prototype of the Soma ceremonies, etc.

The descriptions of the later rituals are not complete in themselves, but concentrate on modifications in the previous rites and insertions of new ones. The Agnicayana chapter of Baudhāyana in Part IV illustrates this procedure. The śrauta sūtras, therefore, express precisely the ritual structures we have considered.¹

BIBLIOGRAPHY

- Hubert, H., and Mauss, M. (1909). "Essai sur la nature et la fonction du sacrifice." *Mélanges d'histoire et des religions*, pp. 1-130.
- Staal, J. F. (1969). "Sanskrit Philosophy of Language." *Current Trends in Linguistics*, 5.499-531.
- _____. (1976). The same article reprinted in H. Parret, ed., *History of Linguistic Thought and Contemporary Linguistics*, pp. 102-136. Berlin.
- _____. (1979a). "Ritual Syntax." In N. Nagatomi, B. K. Matilal and J. Masson, eds., *Sanskrit and Indian Studies: Essays in Honor of Daniel H. H. Ingalls*. Dordrecht pp. 119-142.
- _____. (1979b). "The Meaninglessness of Ritual." *Numen: International Review for the History of Religions* 26. 2-22.

¹ For a further discussion of the significance of these structures, see Staal 1979a and Staal 1979b.

THE AGNICAYANA SECTION OF THE MAITRĀYAṆĪ-SAMHITĀ WITH SPECIAL REFERENCE TO THE MĀNAVA ŚRAUTA SŪTRA

N. Tsuji

THE AGNICAYANA [Ac], as the pinnacle of Vedic ritual, occupies a special position among the śrauta sacrifices owing not only to its elaborateness but also to the fact that it contains many remarkable rites and ritual elements. Theoretically the Ac can be combined with any Soma ritual. The Ac was performed at Paññāl, Kerala, India, in April 1975 as an Atirātra Soma ritual, characterized by the piling up of the falcon-shaped fire altar. The Ac has been examined by many scholars. Weber was the first to describe it accurately according to the tradition of the Vājasaneyins (*Ind. Studien* 13 [1873], pp. 217-292; cf. also "Über Menschenopfer bei den Indern der vedischen Zeit," *ZDMG* 18 [1864], pp. 262-287 = *Ind. Streifen* 1 [1868], pp. 54-89). Next Eggeling's meritorious translation of the Śatapatha-Brāhmaṇa [ŚB] VI-X (*SBE* 41 [1894] and 43 [1897]) along with his introduction, has provided a detailed account of the Ac that is available to scholars in general. In the Taittirīya tradition we not only have Keith's translation of the Taittirīya-Samhitā [TS] IV (mantras) and V (brāhmaṇas) (*HOS* 19 [1914]; cf. Introduction in 18 [1914], p. CXXV-CXXXI), but also Caland's annotated translation of the Āpastamba-Śrautasūtra [Āp] XVI and XVII (Amsterdam, 1928), in which the whole range of the Yajurvedic literature has been cited for purposes of comparison. Of course, Caland has taken both the Maitrāyaṇī-Samhitā [MS] and the Kāthakam [KS] into consideration, but in the belief that, despite van Gelder's translation of the Mānava-Śrautasūtra [Mn] VI (New Delhi, 1963), a description of the Ac in accordance with the Maitrāyaṇīya school would be useful for a synthetic study of this complicated ritual, I present here the Ac solely on the basis of the vidhi elements extracted from the brāhmaṇa section of MS III supplemented by Mn VI. In order to avoid unnecessary complexity I have referred only to the VārāhaŚS [Vr] and the ĀpastambaŚS [Āp]. The tradition of the Vārāhas being somewhat inferior to that of the Mānavas, a detailed comparison of both Śrautasūtras should be reserved for a special study. Further, a comparative study of the tradition of the Kāthas and that of the Maitrāyaṇīyas would be a desideratum in terms of the elucidation of the Ac according to the Carakas as a whole. On the other hand, the references of Caland's notes (from his translation of the Āp) are provided for the reader to enable him to locate parallel passages in other texts.

For the sake of brevity I have had to rely on various devices. Though I am well aware of the importance of the relation between the meaning of a mantra and its context within the ritual act, I have decided to cite mantras merely by the page and line of the texts indicated at the beginning of each paragraph, without pratika or translation. The reader is referred to van Gelder's full translation of all the mantras. Though far from completely satisfactory, this method does not cause much difficulty as far as the verses are concerned, and the boundary of prose formulas is made clear, whenever necessary, by citing a word or two. Moreover, I have made use of several kinds of parentheses: all the passages taken from the Mn are indicated by [] and the number of the sūtras is put in < > while () denotes the page and line (printed in bold type) of the MS containing the vidhi elements in question. Well-known ritual terms or words that defy exact rendering are often left untranslated. For the definition of such terms, I recommend Renou, *Vocabulaire du rituel védique* (Paris, 1954). Even given these restrictions, I have had to stop at the beginning of the fifth layer (citi), that is, approximately at the end of the first half of MS III. Since however, our special interest lies more in the piling up of the fire altar than in the Soma sacrifice proper, I hope that readers may derive a rough idea of the Ac according to the Maitrāyaṇīyas even from this crude torso.

ABBREVIATIONS

abhim.	abhimantraṇa, addressing to an object (in order to consecrate it)
Ac	Agnicayana
adhv.	adhvaryu
āhav.	āhavanīya fire
anum.	anumantraṇa, recitation of a mantra at the end of a sacrificial act
Āp	ĀpastambaŚS
Cal.	W. Caland
CH	W. Caland and V. Henry, <i>L'Agniṣṭoma</i> (Paris, 1906-7)
gārh.	gārhapatya fire
iṣṭ. (iṣṭs.)	iṣṭakā(s) "brick(s)"; for the so-called iṣṭs. not made of clay, cf. Āp XVI. 13, 10
m., (mm.)	mantra(s), including both verses (ṛc, pl. ṛcaḥ) and prose formulas (cf. y., yy.)
Mb	The brāhmaṇa section of the MS
Mm	The mantra section of the MS
Mn	MānavaŚS
MS	Maitrāyaṇī Saṃhitā
prat.	pratika
SB	Śatapatha Brāhmaṇa
ŚS	Śrautasūtra
sū.	sūtra

svayamāt.	svayamātrṇṇā (śarkarā), the naturally perforated (pebble), "der von Natur durchlöchernte Kiesel"
v., (vv.)	verse(s)
Vr	VārāhaŚS
y. (yy.)	yajus (pl. yajūṃṣi), prose formula(s)
yaj.	yajamāna, sacrificer, Opferveranstalter

§1. Preparation of the ukhā pot (ukhāsaṃbharāṇa): Offerings to Savitr. Mb III. 1. 1: p. 1. 1-p. 2. 12: Mn VI. 1. 1. (1-3, generality),¹ 4-7; cf. Vr II. 1. 1. (1-3), 3 (the latter half), Āp XVI. 1. (1-3), 4-7 a beginning.

He (the adhv.) wipes first the juhū ladle and scoops ghṛta (ghee) eight times in it (Mb 1.c. p.1.1-4). With eight mm. relating to Savitr, that is, is, Mm II.7.1: p.73.8-p.74.9 (p.1.5-14)² he offers a single juhōti-libation (p.2.9) by means of the juhū (p.1.3): <Mn 1.c., sū. 5>. — If he wishes that the sacrifice (yajña) be provided with sacrificial splendor (yajñayaśas), he should end his recitation with the ṛc (verse), that is, Mm 1.c. p.74.8-9: imam me deva savitar ff. (p.1.15-p.2.1), but if he wishes that the sacrificer (yajamāna) be provided with sacrificial splendor he should end with the yajus, that is, Mm 1.c. p.74.7 (prat.) = I.11.1: p. 161.6-7 (p.2.1-2,11): <6>. — For a person whom he wishes to prosper he should offer one juhōti after having recited all eight mm. (p.2.3-4.9), but for a person whom he wishes to become worse he should perform offerings separately with each of the mm. (p.2.4-5).³ — Then with Mm 1.c. p.74.10-11 (p.2.5-6,8) [he offers a juhōti of ghṛta scooped four times (caturghṛta)]: <7>.

1. As for the time of the ukhāsaṃbharāṇa <1>, cf. Āp 1.c., sū. 1, Vr 1.c., sū. 3 beg. — 2. They are all verses (ṛcaḥ) except the seventh m.: deva savitaḥ prasava yajñam ff., though they are called here collectively yy. (p.1.12: aṣṭau vā etāni yajūṃṣi, see also p.2.7,9). A distinction, however, is made between a y., that is, the seventh m. (see above) and a ṛc, that is, the eighth m.: imam me deva savitar ff. (p.1.5-p.2.2). ṣaḍ ṛgmāṇi bhavanti (p.1.9-10) seems to refer to the first six mm. that are all verses. — 3. Not mentioned by Mn, but cf. Āp sū. 5.

§2. Ukhāsaṃbharāṇa cont.: A wooden spade is taken up. Mb III. 1. 2: p. 2. 13-p. 3. 8: Mn VI. 1. 1. 8; cf. Vr II. 1. 1. 4, Āp XVI. 1. 7.

With four Sāvitra-mm., that is, Mm II.7.1: p.74.12-18, he takes up a wooden spade (abhri) (p.2.13) made of bamboo (p.2.9, cf. 17.20), which is spotted (kalmāṣa), hollow (suśira)¹ (p.2.18), and double-edged (ubhayataḥ-kṣṇut) or single-edged (anyataratas) (p.3.4-5). The use of the arka-plant (p.3.1) or the udumbara-wood (p.3.6) is also allowed,² but after all any tree is allowable insofar as it bears fruit (phalagrahi) (p.3.7-8): <Mn 1.c. sū. 8>.

—Its length is stated to be a fathom (vyāma), a cubit (aratni), a span (prādeśa) (p.3.1,3) or even unlimited (aparimita) (p.3.7).

1. Perhaps “or not hollow” is to be added as a joint (parvan) is spoken of (p.2.19), cf. Āp sū. 7.b: suśira or asuśira.—2. Many other kinds of plants are mentioned, Āp sū. 7.b including udumbara and arka.

§3. Ukhāsambharaṇa cont.: Procession for obtaining the clay for the ukhā with a horse and an ass. Mb III. 1. 3: p. 3. 9–p. 4. 18: Mn VI. 1. 1. 9–13: cf. Vr II. 1. 1. 5–9, Āp XVI. 2. 1–7.

[Before the āhavanīya fire he performs an abhim. to a horse] with Mm II.7.2: p.74.19–p.75.2 (p.3.12–13), and [to an ass] with Mm 1.c. p.75.3–4 (p.3.14–15): <Mn 1.c. sū. 9>.—Making use of the ass he collects (the clay for the ukhā) (p.3.15) and the horse is led in front and the ass follows it (p.3.17–18): <10, cf. below>.—If he wishes that pāpavasīyasam¹ would occur (to the yaj.) the ass should be led in front and the horse should follow it (p.3.19–20). With Mm 1.c. p.75.5–6² they proceed (p.3.21–p.4.2): <10>.—To a person whom he meets on the way he should say: agniṃ puriṣyam (the fire to be prepared from dust) aṅgirasvad achemaḥ Mm 1.c. p.75.9, and thereby he deprives him of his vigor (vāja) (p.4.12–14)³: <12>.—Where the sun rises, there he should destroy an anthill and say: agniṃ puriṣyam aṅgirasvad bhariṣyāmaḥ Mm 1.c. p.75.9–10 (p.4.14–15)⁴: <13>.

1. Cf. Āp sū. 4 (Cal.): “Wenn er wünscht, dass dem Opferveranstalter nicht lauter Gedeihen, sondern Gedeihen mit bösem Geschick vermischt, zu fallen möge.”—2. Together with Mm 1.c. p.75.7–8, from pratūrāvan to sayujā saha, though Mb p.4.4–10 cites only part of the mm. without giving the viniyoga (ritual use), while Mn <11> uses the next m.: agniṃ puriṣyam aṅgirasvad ābhara Mm 1.c. p.75.8–9 (p.4.11–12) for a japa (a muttered prayer). —3. Cf. Cal. ad Āp sū. 6. —4. Cf. Cal. ad Āp sū. 7: “vor Sonnenaufgang” (ā sūryasyodetoḥ), but the passage of Mn cited above seems merely to prescribe that he should destroy an anthill found to the east.

§4. Ukhāsambharaṇa cont.: An offering on the horse’s footprint, the parilekhana of the spot and the digging of a pit. Mb III. 1. 4: p. 5. 1–19: Mn VI. 1. 1. 14–23, cf. Vr II. 1. 1. 10–17, Āp XVI. 2. 8–3. 2.

With Mm II.7.2: p.75.10 (prat.) = I.8.9: p.128.11–12 (p.5.1) [they move away from the anthill]: <Mn 1.c. sū. 14>.—[Having arrived at the spot where a pit (ākhāna) is to be dug, he performs a japa] with Mm 1.c. p.75.11–12 (p.5.1–2): <15>.—With Mm 1.c. p.75.13–14 and 15–16 (p.5.3–6) [he makes the horse step on the spot]: <16>.¹ [When the horse steps on it the yaj. should say] concerning a person whom he hates: overcome so and

so (amum abhitiṣṭha) (not given in Mm II.7.2, but s. Mb 1.c. p.5.7): <17>, cf. Āp sū.2.10.—With Mm 1.c. p.75.17–18 (p. 5.7–8) [he makes the horse step away from the spot]: <18>, and with Mm 1.c. p.75.19–p.76.2 (p.5.8–9) [he performs an abhim. to the horse]²: <19>. Then he offers a juhōti upon the horse’s footprint with Mm 1. c. p.76.3–4 and 5–6 (p.5.12–13): <20>.—Then he draws the lines around the spot (parilikhati) with Mm 1.c. p.76.7 (prat.) = I.1.9: p.5.7. (gāyatrī), 10–11 (triṣṭubh) and 8–9 (anuṣṭubh) (p.5.14–16)³: <21>.—With the Sāvitra-mm.⁴ he takes up the abhri (p.5.16): <22>, and digs the pit with two mm. Mm 1.c. p.76.12–15 (p.5.16,18)

1. But the second m. dyaus to prṣṭham etc. is used for touching the horse by Vr sū. 13, cf. Āp sū. 2.9.—2. As for the horse’s color, cf. below §15.IV, n.3. —3. Against the order of the mm. Mm 1.c. p.76.7–11 where the anuṣṭubh-verse stands before the triṣṭubh-verse, cf. TS IV.1.2. t–w. —4. Cf. above on Mb III.1.2: p.2.13: <Mn sū. 8>.

§5. The collecting of the dust (puriṣa) from the pit (ākhāna). Mb III. 1. 5: p. 6. 1–p. 7. 4: Mn VI. 1. 1. 24–33, cf. Vr II. 1. 1. 18–27, Āp XVI. 3. 3–9.

With Mm II.7.3: p.76.16–17 (p.6.1–3) [he unfolds a lotus leaf (puṣkara-parṇa)]: <Mn 1.c. sū. 24>, and [to the north of the pit] he spreads with Mm 1.c. p.76.18–19 [and p.77.1–2] a skin of the black antelope (kṛṣṇājina) with its hairy side turned upward,¹ and [thereupon] the puṣkaraparna (p.6.4–6.8) on which the clay is to be laid (p.6.7,9): <25>.—[The puriṣa (‘dust, Schutt’) is strewn upon the puṣkaraparna lying on the kṛṣṇājina] with Mm 1.c. p.77.3 (p.6.13–14)² and with the [three] gāyatrī-verses Mm 1.c. p. 77.4–5, 6–7 and 8–9 for a brāhmaṇa, with the triṣṭubh-verses Mm 1.c. p. 77.10–12, 13–14, and 15–16 (bṛhatī!)³ for a rājanya and with the jagatī-verses Mm 1.c. p.77.17–18, 19 (prat.) = I.5.1: p.66.4–5⁴ and p.78.1–3 for a vaiśya (p.6.9–12): <26>. But if he wishes that some one may prosper, then he should lay the puriṣa for him with the gāyatrī- and triṣṭubh-verses (p.6.12–13): <27>. —The pit is sprinkled with Mm 1.c. p.78.5–6 and 7–8 (p.6.19–22, p.7.1–2): <29>. —The viniyoga of Mm 1.c. p.78.9–10 (p.7.4–5) can not be determined from the context, [but according to Mn 1.c. sū. 30 and 31 the puriṣa is addressed with the first half of the verse, and the kṛṣṇājina containing the puriṣa is tied with the latter half by means of a cord of muñja-grass or arka-plant, cf. Vr sū. 25, Āp sū. 7]. —With two mm. Mm 1.c. p.78.11–12 and 13–14 the kṛṣṇājina is lifted up (p.7.7–8): <32>, and with Mm 1.c. p.78.15–17 (p.7.9–12) [he performs a japa]: <33>.⁵

1. Mb contains no particular precept except lomataḥ sambharati (p. 6.8). But Mn 1.c. sū. 25 gives a much more detailed description: prāgrīva and uttaraloma for the kṛṣṇāj. and upariṣṭānnābhi and prāgdvāra for the puṣkarap. (cf. Mn VI.1.7.1: just the opposite

position, see below §16 beg., cf. Āp sū. 3. — 2. As the y. : puriṣyo 'si, etc. Mm 1. c. p. 77.3 is mentioned before the gāyatrī-verses, etc., it seems to be recited before those verses, so Mn 1.c. sū. 26 and Āp sū. 4 (Cal.), but the statement of Mb: tisṛbhiḥ sambharati (p.6.16) combined with yajusturiyam (p.6.17) seems to suggest that the y. should follow those verses, so Vr sū. 22: yajuruttarābhir gāyatrībhiḥ and 23: sarvatra yajuḥ. Moreover, the gāyatrī- and triṣṭubh-verses are to be recited together for a special wish <27>, and Vr sū. 23 states: aṣṭabhiḥ ca sambharet, that is, three gāyatrīs plus a yajus and three triṣṭubhs plus a yajus. — 3. Cf. Cal. on Āp sū. 4. — 4. The viniyoga of this m.: ayam to yonir ṛtviyo etc. is not indicated unless by a vague allusion such as yonir vā eṣo 'gner yat puṣkara-parṇam, (p.6.2,10). But according to Mn 1.c. sū. 28 the m. is used for touching the strewn puriṣa, cf. Vr sū. 24. — 5. Instead of japati, Vr sū. 27 and Āp sū. 9 have harati.

§6 The carrying of the bundle of puriṣa placed on the back of the ass to the sacrificial ground and its treatment. Mb III. 1. 6: p. 7. 15 – p. 8. 15: Mn VI. 1. 1. 34–2. 4, cf. Vr II. 1. 1. 28–35, Āp XVI. 3. 10–4. 2.

With Mm II.7.4: p.79.1–2 he puts (the bundle containing the puriṣa) on the back of the ass (gardabha) (p.7.15): <Mn 1.c. sū 34>, and with Mm 1.c. p.79.3–4 (p.7.17–18) [he performs an abhim. to the puriṣa]: <35>. [With the horse in front they go back (to the sacrificial ground)]: <36>. With Mm 1.c. p.79.5–6 and 7–8 (p.7.18–p.8.12) [he performs abhim.'s one after another to the horse, to the ass and to the puriṣa]: <37>. With Mm 1.c. p.79.9 (y.) (p.8.3) [he performs an abhim. to a man whom he meets on the way]¹: <38>. — [Having prepared a quadrangular mound of earth (khara) to the south of the āhavanīya-fire² and enclosed it: <39>, he strews darbha-grass on it and places the bundle containing the puriṣa upon it] with Mm II.7.5: p.79.10–11 and 12–13 (p.8.5–7): <40>. [According to Mn 1.c. sū. 41 the horse and the ass are given to the adhv.]. — The cord of the bundle is untied with two mm. Mm 1.c. p.79.14–15 (p.8.8–9) and probably II.12.3: p.147.1–2: vi te muñcāmi raśanām, etc. (in accordance with Vr sū. 32): <2.1>. — He pours water [filtered through leaves and bark] on the puriṣa with three mm. Mm 1.c. p.79.16–17, 18–19, and p.80.1–2 (p.8.10–11): <2.2>, and with Mm 1.c. p.80.3–4 and 5–6 (p.8.12–13) he mixes it with five substances (p.8.15) [: hairs of a goat (ajaloma) and of the kṛṣṇāj., and the following three reduced to powders, that is, śarkarā (pebbles), veṇvaṅgāra (charcoal made from bamboo) and armakapāla (potsherds from ruins, Abfälle einer Trümmelstätte)³]: <2.3> — [Then, with Mm 1.c. p.80.7–8, 9–10, and 11–12 he performs an abhim. to the mixed lump and hands it to the patnī]: <2.4>.

1. Cf. above Mb III.1.3.: p.4.12–14: Mn VI.1.1.12; Āp XVI.2.6 and 3.13. — 2. But cf. Āp sū. 3.14: uttareṇa vihāram “nördlich vom Opferplatz” (Cal.). — 3. Cf. Vr sū. 34, Āp sū. 4.1.

§7. Ukhāsambharaṇa up to the fumigation. Mb III. 1. 7: p. 8. 16–p. 9. 16: Mn VI. 1. 2. 5–14, cf. Vr II. 1. 1. 36–41, Āp XVI. 4. 3–5. 7

With makhasya śiro 'si (y.) Mm II.7.6: p.80.13 (p.8.16) (he touches the lump): <Mn 1.c. sū. 5>. [While the patnī prepares the quadrangular ukhā] with three elevations (tryuddhi) (p.9.2)¹ [in the middle]: <6.7>, [yaj. performs the anum's: vasavas tvā . . . yajamānāya Mm 1.c. p.80.13–15 (p.8.17) [when the first uddhi is made]; [rudrās tvā . . . yajamānāya ib. 15–17 when the second uddhi is made; ādityās tvā . . . yajamānāya ib. 17–p.81.1 when the third uddhi is made; and viśve tvā devā . . . yajamānāya ib. p.81.1–3 while it is smeared] ending each time with the y.: dhruvāsi, etc. Mm 1.c. p.80.14–15, cf. 16–17 and 18–p.81.1 with var. (p.8.19, cf. 20: yajuṣā karoti): <8>. — [with adityā rāsnāsi Mm 1.c. p.81.3–4 the patnī makes a girdle (rāsnā) two aṅgulas below the opening²: <9>, and with aditiṣ te bilam grhṇātu ib. 4 she makes an opening in the girdle: <10>.] The ukhā should be provided with eight, four, or two nipples (stana)³ (p.9.3–5) (in the quarters)⁴: <11>. The ukhā is of a vyāma, an aratni, or a prādeśa in size (p.9.6–8)⁵ — [After having smeared the ukhā by means of a stalk of sugarcane, she sets it down with Mm 1.c. p.81.5–6⁶: <12>.] — [From the rest of the lump the aṣādhā-iṣṭakā is made⁷: <13>.] — With seven yy. Mm 1.c. p.81.7–10 up to dhūpayatv aṅgirasvat he fumigates the ukhā (p.9.9, 10–11, 13–14) [with the fire taken from the gārḥ.-fire] by means of horse-dung (aśvaśaka) (p.9.14,16) [on the khara (see above Mn VI.1. 1.39–40)⁸: <14>].

1. On uddhi ‘Erhöhung’ Aufsatz’, being virtually equal to “Ring,” s. Cal. on Āp V.22.6. As for the number of the uddhis, cf. Āp sū. 4.7. — 2. So also Āp sū. 4.11.b, but cf. Vr sū. 37: uttame tṛtiye. — 3. As for the number of the stanas “Erhöhungen in der Gestalt von Brustwarzen,” cf. Āp. sū. 5.2 (Cal.); Vr sū. 38 has only stanau. — 4. More exactly Vr sū 38: āsrinām rāsnāyāś ca samavāye, similarly Āp sū.5.2. — 5. Mn does not give these measures except for a vague reference: āmnātaṃ pramāṇaṃ prathayitvā <7>. — 6. Cf. sikatāsu Vr sū. 39, Āp sū. 5.3. — 7. See below Mb III.2.7: p.25.15–p.26.1: §17, cf. also Vr sū. 40, Āp sū. 5.4. — 8. Cf. gārhapatyē Vr sū. 41, Āp sū. 5.7.

§8. The baking of the ukhā. Mb III. 1. 8: p. 9. 17–p. 11. 7: Mn VI. 1. 2. 15–22, cf. Vr II. 1. 1. 42–48, Āp XVI. 5. 8–6. 1.

[Before the gārḥ.] he digs a pit (avaṭa, āpāka Mn, or garta Vr) with Mm II.7.6: p.81.9–10 up to khanatv avaṭa (p.9.18–19)¹: <Mn 1.c. sū. 15>, and places the ukhā in it with Mm 1.c. p.81.10–11 up to dadhātūkhe (p.10.1–2) [and the aṣādhā-iṣṭ.² too]: <16>. — [After having surrounded the baking place (pacana) with shavings (kupina)³ and wetted it] he bakes the ukhā with Mm 1.c. p.81.11–16 (p.10.4–11)⁴ [by means of the fire taken from the gārḥ.]: <17>. — With Mm 1.c. p.81.17–18 (p.10.14–15) [he attends the enkindled ukhā]: <18>, and with Mm 1.c. p.81.19–20: devas tvā savitodvapatu . . .

svaṅguriḥ he takes it out of the pit (p.10.15-16): <19>. Then he stands up with Mm 1.c. p.81.21-p.82.2: uttiṣṭha bṛhatī bhava etc. (p.10.17-18)⁵: <20>.—[Bringing it round in front of the āhav. he puts it on the khara (see above Mn VI.1.2.14)] with Mm 1.c. p.82. 2: mitraitām ta ukhām paridādāmy abhittā, eṣā mā bhedi he assigns it to Mitra (p.10.18-p.11.2); <21>. But if the ukhā breaks before it is assigned to Mitra, another one should be prepared anew (p.11.2).—With [four yy.] Mm 1.c. p.82.3-6 beginning with vasavas tvāchṛndantu etc. he fills it with goat-milk (p.11.2-7): <22>.

1. Hereafter the ritual acts can be easily inferred from the mm. themselves.—2. Cf. above Mn VI.1.2.13.; Āp sū. 5.9 and 12.—3. Cf. Āp sū. 5.8: lohitapacanīyaiḥ sambhāraiḥ (“mit rotbrennenden Substanzen” Cal.) pracchādya.—4. I.e., dhiṣaṇā tvā . . . abh-inddhām (read so also p.10.4 end) ukhe (p.81.11-12), gnās tvā . . . śrapayantv ukhe (ib. 12-13), varutrī tvā . . . pacatām ukhe (ib. 13-14), janayas tvā . . . pacantūkhe (ib. 14-16); cf. Mb 1.c. p. 10.13: tasmād etāni paktimanti (read so) yajūṃṣi tair evaitām pacati, but in reality there are only two yy. which contain the verb-forms from pac-, so adds Mb ib.: dvābhyām pacati. —5. Read pṛthivy āśā (= Mm 1.c. p.82.1) for pṛthivyām āśā on p.10.17.

§8 bis. Mn VI. 1. 2. 23-26 having no corresponding passage in Mb. Cf. Vr II. 1. 1. 48-2. 1, Āp XVI, 6. 2-7 (Cal.).

[He brings a head of a vaiśya or a rājanyabandhu (perhaps “an ignoble kṣatriya”) killed by the lightening or by an arrow: <23>, and places on the cut (cheda) of the body an anthill pierced sevenfold and seven beans (māṣa) with the m.: ayam yo asya yasya ta idam śirah, etc.¹: <24>. He then takes the head in his hand with the m.: idam asmākaṃ bhuje bhagāya bhū-yāsam²: <25>, and singing the Yama-gāthās: yo’sya kauṣṭhyajagataḥ etc. he brings the head near and smears it with clay (mṛd): <26>].³

1. Cf. ayam yo ’si yasya ta idam śira etena tvam atra śirṣaṇvān edhi KS XXXVIII.12: p.113.14, Vr sū. 1.52 (without atra), Āp sū. 3.—2. Better bhūyāt as KS 1.c. p.113.15, Vr 1.c., Āp sū. 6. —3. It is rather strange that Mb does not mention here this remarkable rite, but cf. KS XX.8: p.27.1-6, for the mm. XXXVIII. 12: p.113.8-15; KapS XXXI.10: p.157.13-19.

§9. The Dikṣāhutis: the kindling of the ukhya-fire and the putting of various samidhs in it. Mb III. 1. 9: p. 11. 8-p. 13. 4: Mn VI. 1. 3. 20-31, cf. Vr II. 1. 2. 17-30, Āp XVI. 8. 13-10. 7.

[After having offered five juhōtis, that is, the usual Dikṣāhutis with ākūtyai prayuje agne svāhā, etc. Mm I.2.2: p.10.11-14 (cf. Mn I.1. 2.1, CH §16)] he performs six juhōtis with the “ādhītayajūṃṣi” separately (nānā):

ākūtam agniṃ prayujam svāhā, etc. Mm II.7.7: p.82.7-9 (p.11.8-9): <Mn 1.c. sū. 20>.—But if he wishes that some one may become deaf (badhira) he should perform only one offering after having recited the yy. continuously (p.11.10-11).¹—Then he offers [a pūrṇāhuti] as the seventh juhōti with an anuṣṭubh-verse (p.11.13), that is, Mm 1.c. p.82.10-12 ending with svāhā: <20 end>.—[The ritual proceeds up to the muṣṭikaraṇa, CH 17.g]: <21>. —He heats the ukhā [on abundant coals of the āhav.] with two mm. Mm 1.c. p.82.13-14 and 15-17 (p.11.14-17): <22>, [and he puts muñja-grass or some other quickly inflammable material (kṣiprāgni) in the heated ukhā so that the fire may be produced by heating: <23-24>]. —[At this point the āhav. is to be extinguished²: <25>]. —Heating is the way of producing fire for a person desirous of prosperity (bhūtikāma) (p.11.17-18) [unless special wishes come into play]: <26>. For a person who has attained prosperity (gataśrī) the fire should be produced by drilling (p.11.19); for a person desirous of food it should be taken from a roasting pan (bhrāṣṭra) (p.11.20); [for a person desirous of priestly glory (brahmavarcasa), from lightening when it flames on the top of a tree]; for a person whose dominion he wishes to be victorious by prasena (?)³ from a forest fire (pradāva) (p.11.21-p.12.1); <27>. He may bring the fire from anywhere else for a person to whom he wishes that an injurious rival be born (p.12.2-3)⁴. —[Having inflamed the ukhya-fire he adds samidhs (firewood):] he puts a stick of krumuka⁵ smeared with ghr̥ta (ghee) with Mm 1.c. p.83.1-2 (p.12.4-5), a stick of udumbara with Mm ib. 3-4 (p.12.6-7), a stick of vikaṅkata with Mm ib. 5-6 (p.12.8-9), a stick of śamī⁶ with Mm ib. 7-8 (p.12.9-10): <28>.⁷ [In Mn sū. 28 end the use of a stick of udumbara not hewn by an axe (aparaśuvṛkṇa) or of a tilvaka-stick with five mm. Mm ib. 9-18 is recommended for the purpose of an abhicāra, and further an aśvattha-stick is said to be put on the fire with Mm 1.c. p.83.19-p.84.1. But again according to Mn sū. 29 a stick of śamī not hewn by an axe or a tilvaka-stick is to be put on the fire with Mm 1.c. p.84.2-3 for an abhicāra-practice and the yaj. should meditate on a person whom he hates.] On the other hand Mb referring partly to the mm. Mm 1.c. p.83.9-18 (p.12.12-15, cf. above Mn sū. 28) mentions the abhicāra-use of a tilvaka-stick (p.12.17-18) and contains the same phrase yaṃ dviṣyāt taṃ tarhi manasā dhyāyet “he should then meditate on a person whom he hates” (p.12.18-19) as cited by Mn sū. 29 end, while Mm 1.c. p.84.2-3 (cf. above Mn sū. 29) is quoted merely by prat. without any indication of the viniyoga (p.12.20). —Mb p.12.21 warns that one should not utter an unpleasant matter to a performer of the Ac (agnicit) nor to a knower of the Ac (agnivid).⁸ —Lastly Mb refers to Mm 1.c. p.84.6-7: samśitam me brahma, etc. (p.12.21-22) and to Mm ib. 8-9: brahma kṣatraṃ sayujā, etc. (p.13.3-4, cf. also p.13.1-2) without giving the viniyoga. [According to Mn, he, going to put an udumbara-stick, makes the yaj. recite two mm. Mm 1.c. p.84.4-5 and 6-7: <30>, and he puts the samidh on the ukhya-fire with Mm ib. 8-9: <31>].

1. This abhicāra is not mentioned by Mn, but cf. Cal. on Āp sū. 8.14. — 2. So also Āp sū. 9.10 — 3. "By extension" v. Gelder, cf. Cal. on Āp sū. 9.8.a. — 4. Not found in Mn, but cf. Āp sū. 9.7. — 5. For the meaning, cf. Cal. on Āp sū. 9.6. — On the various kinds of wood mentioned in the following, cf. Vr sū. 22–28, Āp sū. 9.6–10.5. — 6. Mn sū. 28 adds aparāśuvṛkṇa "not hewn by an axe," suggested by Mb p.12.10–12. — 7. From here the agreement between Mb and Mn is not complete. — 8. Not found in Mn, but cf. Āp sū. 10.6 (Cal.).

§10. The five animals for Agni and Prajāpati; a goat for Vāyu niyutvat as their substitute.¹ Mb III. 1. 10: p. 13. 5–p. 14. 4: Mn VI. 1. 3. 1–19, cf. Vr II. 1. 2. 2–16, Āp XVI. 7. 1–12.

The [potent] paśus for Agni [that is, a horse, a bull, a ram (vṛṣṇi) and a he-goat (basta)] are immolated to fulfill the yaj.'s wish² (p. 13.5) [as well as a potent goat (aja)³ for Prajāpati]: <Mn 1.c. sū. 1> — After the paryagnikaraṇa they (i.e., persons in charge) release (the four paśus for Agni (p.13.6–7) and complete the sacrifice with one, that is, the goat for Prajāpati (p.13.7): <8>. The yājyānuvākyās for it are in the triṣṭubh-meter (p. 13.8),⁴ and a dvādaśakapāla-puroḍāśa for Agni vaiśvānara is offered (p.13.9): <9>.⁵ — [The heads of the released paśus are cut off and placed down: <10>, and their bodies and tongues are thrown into a pool from which he wishes to collect the clay for preparing the iṣṭakās: <11>.] — But instead of all these five paśus, he who is desirous of vigor (tejaskāma) may immolate a white, [potent and tūpara] goat for Vāyu niyutvat⁶ (p.13.11–12, cf. also sarveṣāṃ vā eṣa paśūnāṃ rūpāṇi prati, ib. 14–15); <12>. — A dvādaśakapāla-paśupuroḍāśa for Prajāpati is offered (p.13.16); <15>. [Having laid the tongue on the avadānas (cooked flesh pieces) he should put down the head of the paśu: <16>.] — Then he offers [as the Dikṣanīyeṣṭi, cf. CH §15] an ekādaśakap.-puroḍ. for Agni and Viṣṇu (p.13.17), a caru in ghr̥ta for Aditi (p.13. 18) and a dvādaśakap.-puroḍ for Agni vaiśvānara (p.14.2): <18>.

1. On account of the ritual sequence, it seems better to place this paragraph before §9. — 2. For the expression agnibhyaḥ kāmāya (Mb) and a° kāmēbhyaḥ (Mn), cf. Cal. on Āp sū. 2: a° kāmāya "den Agnis, dem Kāma." — 3. tūpara "hornless" according to Vr sū. 3, Āp sū. 1. — 4. Similarly Āp sū. 10: for the āgneya-paśus. — 5. Both Mb and Mn (cf. sū. 7–9) are succinct on the prājāpatyapaśu, cf. Vr sū. 4–12, Āp sū. 2–11. — 6. Cf. Y. Ikari: Notes on the vāyavyapāsu (BSS X. 9–11), *Journal of Indian and Buddhist Studies* 48 (Tokyo, 1976), p. (87)–(95).

§11. The yaj. makes the four Viṣṇu-steps with the ukhya-fire. Mb III. 2.

1: p. 14. 5–p. 16. 8: Mn VI. 1. 4. 1–17, cf. Vr II. 1. 3. 1–17, Āp XVI. 10. 8–18.

With Mm II.7.8: p.84.10–11 the yaj.¹ puts on a golden plate (rukma) (p.14.5) with twenty-one knobs (nirbādha) (p.14.6–7, 9–10): <Mn 1.c. sū. 1>, facing downward (adhastāt, i.e., inward) first and then facing upward (i.e., outward) (p.14.10–11)²: <2>. — [A chair (āsandī) is put down, the feet of which measure a span (prādeśa) high,³ the rest being the same as described in Mn II.1.4.34. A sling (śikya, "Tragband") made of muñja-grass with six⁴ or twelve strands is placed on the āsandī: <3–6>.] — With Mm 1.c. p.84.12–13 (p.14.11–15) [he takes up⁵ the ukhya, that is, the fire in the ukhā, in fact, the ukhā containing the fire, and places it on the śikya]: <7>. With Mm 1.c. p.84.14–15 (p.14.15–p.15.3) [he puts the noose of the śikya (śikyapāśa) round his neck, and wears the kṛṣṇājina with the same m. as used in sū. 7]: <8>.⁶ — The viniyoga of the two yy. Mm 1.c. p.84.16–p.85.2. (p.15.4–5) and p.85.2–3 (p.15.6) is not clearly indicated. [According to Mn, however, the former is used as a japa: <9>, while the latter is employed for yaj.'s raising up of the ukhya-fire and holding it over his navel⁷: <10>.] — [Then the yaj. makes the four viṣṇukramas⁸ with Mm 1.c. p.85.3–4, 4–5, 5–6, and 6–7 (yy.) toward the east: <10>.] — [The viniyoga of Mm 1.c. p.85.8–9 is not given, but Mn uses it as the yaj.'s japa: <11>.⁹] — With four mm. Mm 1.c. p.85.10 (prat.) = I.7.1: p.109.12–p.110.2 the yaj. turns round to the right (pradakṣiṇam) (p.15.14–18): <12>, and [turning round he performs a japa] with Mm 1.c. p.85.11–12 (p.15.18): <13>.¹⁰ — With Mm 1.c. p.85.13 (prat.) = I.2.18: p.28.8–9 (p.15.19) [he loosens the śikyapāśa: <14>, and with Mm ib. 14–15 (p.15.20) [he performs an abhim. to the ukhya-fire]: <15>]. — With Mm ib. 16 (prat.) = II.6.12: p.71. 14–15 (p.16.1) he places the ukhya-fire on the āsandī (p.16.4–6): <16>. Lastly with three mm. Mm. 1.c. p.85.17–18, p.86.1–2 and 3–4 he performs the upasthāna (the rendering of a worship while standing) of the ukhya-fire (p.16.6–7): <17>.

1. Cf. Vr sū. 17, Āp sū.9. — 2. Mn sū. 2 prescribes only that the rukma is to be borne with its knobs up, but cf. Āp sū.9 (Cal.). — 3. For the size of the āsandī, cf. Vr sū. 4, Āp sū. 16. — 4. As for six strands, cf. Mb 1.c.: p.15.10: ṣaḍudyāvam śikyam bhavati. — 5. udyamya: agnim udyacchate Mb 1.c. p.14.15. — 6. So also Vr sū. 7, Āp sū. 11. — 7. Cf. uparinābhi Mb 1.c. p.15.11. — 8. Cf. athaite kramāḥ Mb 1.c. p.15.7, s. also 9–10; prakrāmati Mb ib. 13. — 9. Cf. Vr sū. 10, Āp sū. 13. — 10. So also Vr sū. 12.

§12. I. The Vātsapra-sūkta. Mb III. 2. 2: p. 16. 9–p. 17. 2: Mn VI. 1. 4. 18, cf. also 23, 25 and 40, cf. Vr II. 1. 3. 20, Āp XVI. 11. 6–9 (Cal.).

With the Vātsapra-hymn¹ consisting of twelve triṣṭubh-verses = Mm II.7.9: p.86.5–p.87.8 the yaj. performs the upasthāna of the ukhya-fire (p.16.9,13,14). He makes the Viṣṇukramas (above § 11) and worships the

ukhya-fire with the Vātsapra-hymn each alternate day (p.16.14-15,16), but on the day on which he is going to begin the piling of the fire-altar (agniciti) he should perform both of them (p.17.1)²: <Mn 1.c.>.

1. On its origin, cf. Mb 1.c. p.16.9-13: the legend of Vatsapri Bhālandana. — 2. Cf. Cal. on Āp sū. 9.

§12. II. When the yaj. makes a journey. Mb III. 2. 2.: p. 17. 2-8: Mn VI. 1. 4. 27-30¹, cf. Vr II. 1. 3. 25-30, Āp XVI. 12. 4-7.

[When the yaj. stays out or makes a journey he should take up the ukhya-fire] with Mm II.7.10: p.87.9-10 (p.17.2-3): <27>, [and with Mm II.6.12: p.71.14-15 (as above Mn VI.1.4.16) and II.7.8: p.85.17-p.86.4 (as above Mn ib. 17) he puts it on a wagon (anas), while he (also) places (the other two fires) on it after having strewn them in two receptacles (pāt-ryoh): <28>.] — Then he starts with Mm II.7.10: p.87.11-12 (p.17.5)²: <29>. — When the axle creaks he should perform a anum. with Mm II.7.8: p.85.8-9 (as above Mn VI.1.4.11) (p.17.6, cf. 6-8).

1. Mn ib. 21-26 skipped over as the passage does not directly relate to the Ac. — 2. Read prayāpayati instead of pravāpayati (p.17.5), cf. prayāti Mn VI.1.4.29, prayāpayati Vr sū. 29, Cal. on Āp sū. 6.

§12. III. The adding of a samidh to the ukhya-fire. Mb III. 2. 2.: p. 17. 8-11¹: Mn VI. 1. 4. 20, cf. Vr II. 1. 3. 21-24, Āp XVI. 12. 8-10.

[When he is going to drink the fasting milk (vratayīṣyan, cf. CH § 22) he kindles the ukhya-fire with Mm II.7.12: p.91.9-10 and adds the first² samidh smeared with ghr̥ta³ to it] with Mm II.7.10: p.87.14-15 (in gāyatrī) for a brāhmaṇa, with Mm 1.c. p.87.16-p.88.1. (in triṣṭubh) for a rājanya and with a double gāyatrī, i.e., a verse in jagatī, for a vaiśya (p.17.8-10): <20>.

1. While Mb mentions first a provision for the yaj.'s journey (above § 12. II) and then prescribes the adding of a samidh (III), similarly Āp, Mn, and Vr treat III before II. — 2. Mn 1.c. presupposes the adding of further samidhs, cf. Mn ib. 21 and 22, s. also Vr sū. 22. — 3. According to Vr sū. 24 not smeared with ghr̥ta (anakta).

§12. IV. The treatment of excessive ashes. Mb III. 2. 2.: p. 17. 11-17: Mn VI. 1. 4. 31-35, cf. Vr II. 1. 3. 31-36, Āp XVI. 12. 11-13. 4.

When the ashes fill up the ukhā he should throw them in the water (p.17.11): <31 beg., 33>.¹ Or he should place them on cowdung (purīṣa)² for a person desirous of cattle (p.17.12): <31 the latter half>. Or he should mix them with (the clay for) the iṣṭakās (p.17.13): <31 the first half>.³ —

[Coming back from the waterside and having put the ukhā in its proper place] with Mm II.7.10: p.88.14 (prat.) = I.7.1: p.109. 17-18 (p.17.14) and I.7.1: p.110.1-2, he performs the upasthāna of the ukhya-fire with two mm. Mm II. 7. 10: p.88.15,16, and 17-p.89.1 (p.17.15-17): <35>.⁴

1. According to Mn sū. 33 with three mm. Mm II.7.10: p.88.3-5, 6-7, and 8-9. But judging from the position of this sū. the Mānavas seem to allow this way of disposing of excessive ashes primarily to a person who wanders about [yāyāvara, cf. sū. 32, Vr sū. 33, see also Āp sū. 12.11,12; 13.2,4 (Cal.)]. — Moreover, Mn sū. 34 prescribes that he should throw back two handfuls of ashes into the ukhā with two mm. Mm 1.c.: p.88.10-11 and 12-13, cf. Vr sū. 35, Āp sū. 12. — 2. Read purīṣe instead of purīṣam in Mb p.17.12 and Mn sū. 31, cf. Vr sū. 32, Cal. on Āp sū. 13.3. — 3. Cf. Cal. on Āp sū. 13.2. — 4. Mn sū. 36-40 (general precepts) are skipped over, cf. Vr II. 1.4.1-4, Āp sū. 13.5-12.

§13. The piling (citi) of the śālāmukhīya-fire. Mb III. 2. 3: p. 18. 1-p. 19. 18: Mn VI. 1. 5. 1-13, cf. Vr II. 1. 4. 5-20, Āp XVI. 14. 1-15. 7.

With Mm II.7.11: p.89.2-5 (p.18.1,3-4) [he chooses the place for the śālāmukhīya-fire, that is, the new gār̥h.].¹ He digs the ground a vyāma long (p.18.6-7) and sprinkles the place with water (p.18.8) [the area marked should be circular or quadrangular. And then he surrounds the place with twenty-one pebbles (śarkarā) with Mm 1.c. p.90.4: citaḥ sṭha . . . śrayadhvam]²: <Mn 1.c sū. 1>. — With Mm 1.c. : p.89.6: agner bhasmāsy, agneḥ purīṣam asi "Thou art the ashes of Agni, thou art the dust of Agni" he strews gravel (sikatā) on the place (p.18.10-11) and saline earth (ūṣa) thereupon (cf. p.18.2 ff., esp. 17,19) [with Mm 1.c. p.89.6-7: samjñānam asi, etc]: <2>. — [Here inserts Mn sū. 3 a japa by the adhv. or the yaj. with Mm I.6.1: p.86.5-6 and p.85.18-p.86.1.]³ — [After having pushed asunder the saline earth and gravel] he places [in the middle of the place] four iṣṭs. turned eastward (p.18 end-p.19.1) [with Mm II.7.11: p.89. 8-10, 11-12, 13-14, and 15-16], and in front of them two others turned in the same direction (that is, turned eastward) (p.19.4)⁴ [with Mm 1.c. p. 90.1-2 and 3 (prat.) = I.5.1: p.66.4-5] and behind them two others turned to the same direction (p.19.5) [with Mm 1.c. p. 90.3-4]: <4>; thus these central iṣṭs. are eight in number (p.19.5).⁵ — [At each piling he should add: tayā devatayāṅgirasvad dhruvā sīde "By this deity sit thou firm in the way of the Aṅgiras's" Mm 1.c. p. 90. 3 and 4: <5>].⁶ — [In order to fill up the layer thirteen lokam-prṇās "the space-filling bricks" are placed with Mm II.8.1: p.106.3-4 beginning with lokam prṇa, etc., and tā asya, etc., ib. 5-6: <6>];⁷ thus the total number of the iṣṭs. together with eight central ones (see above) amounts to twenty-one as alluded to in Mb 1.c. p.19.6-7.] — [Further Mn sū. 7 prescribes the putting down of a piece of gold (hiraṇyaśakala) on each layer

(cityām cityām), and ib. 8 the covering of the layer with the puriṣa “dust” from the cātvāla-place with Mm II.13.11: p.161.14–17.] — The gārḥ. -citi is accomplished in three layers (p.19.8) or five layers (p.19.9); [more precisely Mn sū. 9: five or three layers or one layer are prescribed for a person who performs the Ac for the first, the second, or the third time, respectively, cf. Vr sū. 17, Āp sū. 15.3–4]. — With four mm. Mm II.7.11: p. 90.5–6, 7–8, 9–10, 11 (prat.) = I.2.7: p. 16.8–9 (p.19.10,15) [he places the ukhya-fire on the new gārḥ. (cf. p.19.11 ff)]: <10>. — With Mm 1.c. p. 90.12–14 (p.19.17–18) [he loosens the ukhā (from the śikya)]: <11>. — [He should not look at the empty ukhā: <12>, and he should put it down after having filled it with gravel (sikātā), sour milk (dadhi), ghr̥ta or honey (madhu):<13>.]

1. Vr sū. 6 states explicitly: āhavanīyadeśe gārhapatyam cinoti “He piles the gārḥ. in the (old) āhav. -place”. — 2. Cf. Vr sū. 7–8, Āp sū. 14.1 (Cal.). — 3. Cf. Vr sū. 7. — 4. So also Vr sū. 13, cf. however Āp sū. 14.6: samici or tiraścī “turned eastward or northward,” see Cal. — 5. Cf. the diagram given by Eggeling, SBE XLI, p.302. — 6. Cf. Āp sū. 14.10. — 7. See also Mb. III.2.8: p.28. 12–p.29.2, where these two verses are explained.

§14. I. The Nirṛti-bricks. Mb III. 2. 4: p. 19. 19–p. 20. 16: Mn VI. 1. 5. 14–24, cf. Vr II. 1. 4. 21–30, Āp XVI. 15. 8–16. 5.

[With Mm II.7.12: p.91.4–5 he takes the śikya: <Mn 1.c. sū 14>.] In the direction of Nirṛti (Goddess of destruction), that is, southwestward (p.19. 20–21): <15>, they (the adhv., yaj., and brahman-priest) bring three black iṣṭs. for Nirṛti baked by chaff-fire (tuṣapakva), and he places them on soil barren by nature (svakṛtā iriṇe), each one more remote from himself (parāc) (p. 19.19–21) [with three mm. Mm 1.c. p.90.15–16, 17–18, and 19 (prat.) = II.2.1: p.15.14–15]: <16>, [but without adding the formula tayā devatayā, etc. (see above Mn 1. c. sū. 5): <17>, cf. also Vr sū. 24, Āp sū. 15.10 (Cal.)]. — With Mm 1.c. p.91.2–3 he throws the net (jāla)¹ over the iṣṭs. (p.20.5): <18>. [Moreover, according to Mn sū. 19 he throws the string of the golden plate (rukmasūtra) after the net and makes the others step with the chair (āsandī) toward the iṣṭs., cf. Vr sū. 26, Āp sū. 16.1 beg.] With Mm 1.c. : p. 91.4–5 ending with svāhā Mm ib. 6, pouring water [from a jar] around the iṣṭs., he goes round them (p.20.7–9) [thrice from right to left (prasavyam), and after having placed down the jar he goes back thrice round them without pouring]: <20>. Having uttered bhūtyai namaḥ “homage to prosperity” Mm 1.c. p.91.6, he turns back (p.20.10): <21>, and they come back without looking behind (p.20.10–11): <23>. — They perform the purificatory bath (mārjana) at a place away from the cowshed (paragoṣṭham) (p.20.11) [with three mm. cited in full by Mn 1.c.]: <22>.³ — With Mm 1.c. p.91.7–8 he performs the upasthāna of the gārḥ. (p.20.13,14): <24>. — [Lastly Vr sū.

30 prescribes the kindling of the āhav. by the yaj. with Mm 1.c. p.91.9–10, while Āp sū. 16.5 mentions the upasthāna of the āhav. or the gārḥ., see Cal.]

1. śikyajāla = śikyapāśa is meant, see Cal. on Āp sū. 16.1, the word nirṛtipāśa occurs Mb p.20.5–6. — 2. The same m. as above Mn sū. 14, but given here in full with pariṣad instead of parṣad. — 3. Vr sū. 27 and Āp sū. 16.3 employ the first m. only.

§14. II. The measurement of the agni-ground (agnikṣetra) on which later the uttaravedi will be piled and the ploughing of the furrows on it. Mb III. 2. 4: p. 20. 16 – p. 21. 10: Mn VI. 1. 5. 25–43, cf. Vr II. 1. 4. 31–5. 7, Āp XVI. 17. 1–19. 10.

[The Soma-ritual proceeds from the prāyaṇīyeṣṭi (cf. CH §26) to the moring upasad-rite (cf. CH §52) and the cutting down of a sacrificial post (yūpaccheda, cf. Mn I.8.1.3) and further to the erection of the pole for the back line (prṣṭhyāśaṅku, cf. Mn II.2.1.51–52). Now one sets about the measurement of the agnikṣetra in the bird-form: <Mn 1.c. sū. 25–29>. As for the ritual situation, cf. also Āp XVI.21.1–2 (Cal.)]. — Mb III.2.4 does not contain the viniyoga of the mm. in Mm II.7.12 and the use of these mm. by Mn 1.c. does not always agree with their order in Mm 1.c. — After the gārḥ. -citi (above §13)¹ the next important act is the preparation of the agnikṣetra for the uttaravedi.² — The measure used is a bamboo stalk equal to the height of the yaj. with uplifted arms, technically a “puruṣa” (p.20.16–17): <Mn. 1.c. sū. 30>. The area of the agnikṣetra is fixed at seven square puruṣas (p.20.21–p.21.1), [four square puruṣas for the body (ātman)], one square puruṣa each for the wings (pakṣa) and the tail (puccha)]³: <31>, and an aratni is added to each of the wings (p.21.2) [and a prādeśa⁴ to the tail, while the head (śiras) measures one quarter of a square puruṣa]: <32 and 33 beg>. — [Having put a piece of gold on a bundle of darbha-grass placed in the middle of the measured ground, he performs a juhōti upon it with Mm II. 12. 3: p. 146. 2–4: sajūr uṣā, etc. : <34>]. — [With Mm II.8.14: p.117.15: prajāpatiṣ tvā, etc., ending with the usual formula tayā devatayā, etc., he touches the middle of the measured ground⁵: <34>]. — [Then in the south of the (right) wing he ties the yoke-straps (yugavaratra) to the plough (sira) with Mm II.7.12: p.92. 9–10⁶: <35>, and the yaj. performs an anum. with three mm. Mm 1.c. p.91. 11–12, 13–14, and 15–16: <36>]. He ploughs with six (p.21.2–3) [or twelve] yoked oxen⁷: <37>. [With Mm 1.c. p.92.11–12 he performs an anum. for the plough when lifted up and with Mm ib. 15–16 for the oxen: <38>]. — [With each of the five mm. Mm 1.c. p.91.17–18, p.92.1–2, 3–4, 5–6, 7–8, and with ib. p.92.13–14 as the sixth, he ploughs two furrows (sītā) each time: <39>. Walking from the southern side of the (right) wing he ploughs a furrow through the middle (toward the north), from the northern end of the (left) wing, turning to the right (pradakṣiṇam),⁸ he ploughs a furrow running southward to the east (i.e., in front) of the first

one and then a furrow running northward to the west of (i.e., behind) the first one: <40>.] — In this way he ploughs three furrows each time (p. 21.4–5). [He ploughs a furrow from (the corner of) the southern buttock (śroni) to (that of) the northern shoulder (aṃsa), from (the middle of the western side of) the tail to (the eastern side of) the head, and from (the corner of) the northern buttock to (that of) the southern shoulder: <41>.] Thus the total number of the furrows amounts to twelve (p.21.5).⁹ — The agnikṣetra is divided into two kinds (dvigna, p.21.7, cf. also 8), that is, the ploughed part and the unploughed one. — [with Mm 1.c. p.92. 17–18] the oxen are set free to this direction (p.21.8–9) [that is, to the southeast]¹⁰: <42>. — [The oxen as well as the plough are given to the adhv.¹¹: <43>.]

1. Cf. Mb p.20.15: gārhapatyō 'gre cīyate "The gārḥ. is piled in the first place." — 2. Cf., e.g., Bürk ZDMG 55 (1901), p.546, Eggeling SBE XLI, p.419. — 3. Cf. Vr sū. 4.32–34, Āp sū. 17.9–14 (Cal.). — 4. Or a vitasti, Vr sū. 4.36, Āp sū. 17.14. — 5. Vr sū. 4.37 inverts the order: the touching of the ground before the juhōti. — 6. Vr sū. 5.1 uses different mm. — 7. So also Vr sū. 4.38, cf. Āp sū. 18.5: with six, twelve, or twenty-one oxen. — 8. Mb p.21. 3–4 (read adhyāvartan kṛṣati, or rather strike kṛṣati): "For this is the way of turning (āvṛt) of the gods" seems to refer to this way of turning around. — 9. On the way of making furrows, cf. Vr sū. 5.4–6, Āp sū. 19.4–7. As for the method of the Vājasaneyins, see ŚB VII. 2.2.7–20 referred to by Āp sū. 19.9 — 10. To the east, Vr sū. 5. 6, cf. Cal. on Āp sū. 19.8: to the north or the east. — 11. Similarly, Vr sū. 5.7, Āp sū. 19.8.

§15. I. The strewing of corn. Mb III. 2.5: p. 21. 11–19: Mn VI. 1. 6. 1–3, cf. Vr II. 1. 5. 8–12, Āp XVI. 19. 11–20. 4.

He strews all kinds of corn (annasyānnasya) on the ploughed part (kṛṣṭe) of the agnikṣetra with fourteen verses Mm II.7.13: p.93.1–p.94.10 (p.21. 11–13)¹: <Mn 1.c. sū. 1>.² — He should not eat that kind of corn he can not strew.³ But when procured he should add it to the firewood (idhma) that first comes to his hand, or he should rather meditate on it in his mind (p.21.16–17).⁴ — If all kinds of corn cannot be found, he should strew barley (yava) mixed with honey (madhu) (p.21.17–18): <2>.⁵ [And with Mm 1.c. p.94.11–18 he performs the upasthāna of the agnikṣetra: <3>.]

1. On these mm., cf. Cal. on Āp sū. 19.11. — 2. According to Mn sū.1 all kinds of plants wild or cultivated mixed with sarpiś (= ghr̥ta) are strewn all over the agnikṣetra (sarvam agniṃ vapati), while according to Vr sū. 8, all kinds of corn (sarvānnāni) as well as barley (yava) mixed with honey (madhu) are strewn on the ploughed part. — Seven cultivated and seven wild plants are enumer-

ated, and the former are said to be strewn on the ploughed part and the latter on the unploughed part, Āp sū. 19.13–14 (Cal.). — 3. Read yasyānnasya na vapati instead of y^o nivapati Mb p. 21.16, cf. Vr sū. 5.9: yasya na vapet tan manasā dhyāyet. — 4. Cf. Āp sū. 20.2–3. — 5. For the Mānavas this is probably the normal way of amending the absence of desired kinds of corn, cf. Āp sū. 20.1.

§15. II. The throwing back of clods, etc. Mb III. 2. 5: p. 21. 19– p. 22. 6: Mn VI. 1. 6. 4–8, cf. Vr II. 1. 5. 13–17, Āp XVI. 20. 5–8, and 9 beg.

[From the quarters¹ outside the vedi he throws back clods (loṣṭa) of earth (thrown out previously) into the middle of the agnikṣetra with four mm. Mm II.7.14: p.95.1–9: <Mn 1.c. sū. 4>.] — If he wishes that a certain community (janatā) be hungry, he should take (the clods) from that direction (where they live) with Mm 1.c. p.95.8–9 (p.22.1–3)²: <5>. — With Mm 1.c. p.95.10–11 he touches (p.22.3) [every furrow]³: <6>. — [Here mentions Mn sū. 7 the preparation of the cātvāla (a hole from which earth for the uttaravedi is taken) by a pair of oxen (goyuga).] — Then he prepares the place of the uttaravedi where the āhav.-hearth will be made later (p.22.4–6). [According to Mn sū. 8, this occupies ten square pada in the middle of the agnikṣetra, and the rite proceeds up to the vyāghāraṇa, that is, the sprinkling of the nābhi ("navel") with ghr̥ta,⁴ cf. Mn II.2.1.54, I.7.3.31.]

1. Faintly alluded to by the word digbhyah in Mb p.21.19–p.22.1. — 2. Cf. Vr sū. 15, Āp sū. 6. — 3. Mn sū. 6: sītām sītām abhi-mṛṣati, somewhat differently Vr sū. 16: loṣṭān kṛṣṭāṃś cābhimṛṣati, cf. also Āp sū. 7 (Cal.). — 4. Cf. Āp sū. 9 beg.

§15. III. The strewing of gravel (sikatā). Mb III. 2. 5: p. 22. 6 – 14: Mn VI. 1. 6. 9 – 11, cf. Vr II. 1. 5. 18 – 21, Āp XVI. 20. 9 – 14.

[After having surrounded the āhav.-place (agni)¹ with pebbles (śarkarā) to the right (pradakṣiṇam) with Mm II.7.11: p.90.4 (as above Mn VI.1.5.1): <Mn 1.c. sū. 9>], he strews gravel all over (the agnikṣetra) with [six mm.] Mm II.7.14: p.95.12–p.96.5 (p.22.6–7)²: <10>. — With two vv. to Soma Mm 1.c. p.96.6–7, 8–10 he pushes the gravel asunder (vyūhati) (p.22.12–13, 13–14) [to the head (śiras), to the junctions (apyaya) of the body with the wings (pakṣa), to the middle of the āhav.-place (agni) and to the svayamātrṇ-ṇā-place]³: <11>.

1. The word agni is used in various meanings. Here it means probably āhavanīyaciter āyatanam as Āp sū. 9 expressly states, in short the āhav.-place, that is, the place destined for the āhav.-hearth. Cf. also Vr sū. 18: agnir uttaravediḥ. On the other hand, uttarav. is used in the meaning of the uttarav.-place by a sort of

anticipation, or in a narrower sense it stands for the āhav.-place.
 — 2. Designated as a sūkta to Agni vaiśvānara (p.22.8). —
 3. The corresponding passage of Vr sū. 19–21 differs considerably from the above description, while Āp prescribes the strewing of gravel before and after the surrounding with pebbles (cf. sū. 9 and 12) and contains much more detailed statements. — N.B. Mn sū. 12 defines the northern junction of the tail (uttara pucchāpyaya) as the passage for approaching the agnikṣetra, cf. Āp sū. 21.3.

§ 15. IV. The entry of a horse. Mb III. 2. 5: p. 22. 14–p. 23. 2: Mn VI. 1. 6. 13–20, cf. Vr II. 1. 5. 22–6. 10 (partly not clear and the agreement with Mn 1.c. is not complete), Āp XVI. 21. 1–22. 1.

[Before the śālāmukhiya, that is, the new gārḥ. (above §13) upon a red bull hide with the neck turned eastward and the hairy side upward, he brings together the iṣṭs. for the first layer: <Mn 1.c. sū. 13>.] — [He utters an order (sampraiṣa) to the hotṛ-priest for the latter's recitation (anuvacana) with the words: "(Recite) for the Agni's (pl.) that are to be laid" in a low voice (upāmsu), "and are being brought forward 'nubrūhi" loudly (uccaiḥ)¹: <14>.] — [When the hotṛ has recited the first v. once (sakṛt),² they bring near (the iṣṭs.) with the hide (above Mn sū. 13), and they lead a horse³ in front (p.22.17): <15>.] [He puts down the hide behind the (right) buttock: <16>.] — [In the middle of the uttaravedi] they make the horse step (ākramayanti, p.22.18, cf. also p.23.2) [with the right foot on the svayamāt.-place with Mm I.5.3: p.69.13–15 and make it proceed eastward (p. 22.19) stepping round the place without turning away]: <17>]. — Then having led the horse westward (p.22.19–20) [and having filled twelve jars (here designated kumbheṣṭakās) with water, he places them with twelve mm. Mm II.13.1: p.151.3–p.153.3 on the middlemost furrows, two by two, i.e., kumbha and kumbhī, on each cardinal point and four in the middle]⁴: <18>]. — [With the three āpohiṣṭhiya-vv. Mm 1.c. p.153.5 (prat.) = II.7.5: p. 79.16–p.80.2 (cf. above Mn VI.1.2.2) he performs a japa looking at the jars: <19>]. — [He places a caru of wild rice (nīvāra) boiled in milk to the southeast of the svayamāt. with Mm 1.c. p.153.5–6⁵: <20>].

1. cityagnibhyaḥ prāṇīyamāṇebhyo 'nubrūhi. — The hotṛ's anuvacana seems to be alluded to in Mb p.22.14–16. — 2. But according to Āp sū. 21.4 (Cal.) after the first v. has been recited thrice. — 3. Nothing is said here of the horse's color, but a white one is used according to Āp sū. 21.5 and 11 (Cal.). Cf. however Mb p.23.1: kṛṣṇo vai bhūtvāgnir aśvaṃ prāviśat "Agni, becoming black, entered a horse" (cf. above §4, n.2), s. also TS V.2.6.5, seems to refer to a black one, cf. further below Mn VI.1.8.16. — 4. The rite of placing the jars is not mentioned either by Mb nor by Āp in this connection, but cf. Vr sū. 5.22–23, though not clear. — 5. Cf. Vr sū. 5.24.

§16. The placing of a lotus leaf, etc., and the placing of various iṣṭakās. Mb III. 2. 6: p.23.3–p. 25. 10: Mn VI. 1. 7. 1–18, cf. Vr II. 1. 6. 11–30, Āp XVI. 22 2–24. 6.

With Mm II.13.2: p.153.6–8 (yy.) (p.23.3,5) he places [on the horse's footprint] a lotus leaf (puṣkaraparna) [with its open part turned westward (pratyagdvāra)] and with its navel turned downward (adhastānnābhi)¹ (p.23.5–6): <Mn 1.c. sū. 1>. — With Mm II.7.15: p.96.11–12 he places on it the rukma (s. above Mn VI.1.4.1) (p.23.8–9) [with its noose (pāṣa) turned westward and its knobs turned upward (upariṣṭānnirbādha)²]: <2>]. — [On the rukma] he places a golden figure of a man (puruṣa-hiranyaya) (p.23.12–13) [with its head turned eastward and its back turned downward (uttāna) with two mm. Mm 1.c. p.96.13–14 and 15–16], and he touches it with Mm 1.c. p.97.17 (prat.) = II.5.10: p.61.14–15 (p.23.15): <3>. — Then he merely recites (anudīṣati)³ three mm. containing the word sarpa "serpent" (sarpanāmāni) Mm 1.c. p.97.1–2, 3–4, and 5–6 (p.23.16–17)] performing the upasthāna of the serpents⁴: <4>. — He besprinkles the golden man with ghr̥ta (vyāghārayati) with five "rākṣasa-destroying" (rākṣoghna) mm. of Vāmadeva Mm 1.c. p.97.7–16 (p.23.18, p.24.1–2) [like the uttaranābhi]⁵: <5>. — Then he places two sacrificial ladles (sruc): one made of kārṣmarya-wood filled with ghr̥ta to the south (of the golden man) with a gāyatrī-v., i.e., Mm 1.c. p.97.17–18 (p.24.3–7) [and with a y. Mm 1.c. p.98.1], and the other made of udumbara-wood filled with sour milk (dadhi) to the north (of the golden man with a triṣṭubh-v., i.e., Mm 1.c. p.98.2–3 (p.24.8–9; see also p.24.10–12 concerning both ladles) [and with a y. Mm ib. 4]: <6>. — Then he places the first svayamāt., after having made the horse sniff at it (p.24.13–15)⁶: <7>. — If his rival (bhrātr̥vya) excels the yaj., the latter should push the svayamāt. slightly to the east with bhūr asi "thou art bhūh"; if the bhrātr̥vya follows him (anu), the latter should push it to the west with bhūmir asi "thou art bhūmi"; if the bhrātr̥vya is equal to him, the latter should push it horizontally with aditir asi, bhūmir asi "thou art Aditi, thou art bhūmi" (p.24.15–17); cf. Vr sū. 19 (referring to the Mb-passage, Āp sū. 23.7). — [Mn sū. 8–13 prescribes how to place the svayamāt. on the golden man, the mm. employed being Mm II.7.15: p.98. 4–6 (from dhruvāsi to pṛthivīm dṛm̐ha), II.8.14: p.117.15–19 (from prajāpatiṣ ṭvā to śaṃtamena), II.10.6: p.139.8–9, and TS V.6.8.1 (the yaj.'s japa).] — [Remarkable is the participation of an ignorant (avidvas) brāhmaṇa: <9>; cf. Vr sū. 17, Cal. on Āp sū. 23.1.] — [Lastly a boon is given to this man: <13>; cf. Vr sū. 22, Āp sū. 23.3] — [With Mm II.7.15: p.98.6–7 (from tejo 'si to pṛthivyā mā pāhi) a piece of gold (here designated hiranyeṣṭakā)⁷ is placed to the east of the svayamāt.; with Mm II.8. 14: p.117.7–9 (from udapurā nāmāsi to dhruvā sīda) an iṣṭ. marked by a circle (maṇḍalā) to the west; with Mm II.7.15: p.98.11–13 the kulāyini iṣṭ. to the south]; with Mm ib. 14–15 [and ib. 16–17] a dūrveṣṭ., that is, a clod mixed with dūrvā-grass (loṣṭa dūrvāmiśra) (p.24.20, p.25.2) [to the north, so as the dūrvā-grass reaches the svayamāt.]: <14>. — Then the [golden-headed] vāmabhṛt-iṣṭ. [with

two kāca's, that is, hiranyaśakalas⁸ on its shoulders is placed to the east] with two mm.⁹ [that is, Mm II.7.16: p.98.18–19 and p.99.1–2] : <15>. — The two retaḥsic-iṣṭs. (p.25.6) are placed [with Mm 1.c. p.99.3 ff. (i.e., the first one with virāḍ jyotir adhārayat “the ruler held the light” and Mm 1.c., p.99.3end–5, from bhūr asi to dhruvā sīda)] : <16>. — If a person who has a son performs the Ac, he should place one of the retaḥsic-iṣṭs. on the first layer [with the y. as cited above] and the other one on the last layer [with the y. Mm 1.c. p.99.3: svarāḍ jyotir adhārayat and ib. 5–7, from sūr asi suvanasya to dhruvā sīda]; but if a person who has no son performs it, he should place both iṣṭs. on the first layer (p.25.9–10)¹⁰: <17>. — [With Mm 1.c. p.99.3: samrāḍ jyotir adhārayat¹¹ he places the (iṣṭ.) jyotiṣo dhṛti to the east of the retaḥsic-iṣṭs. : <18>.]

1. So also Vr sū. 12; nābhi = daṇḍa Cal. on Āp sū. 22.2, cf. above §5,n.1 — 2. So also Āp sū. 22.3; on the contrary Vr sū. 12 seems to read adhastānnirbādha (if rightly emended), but cf. Vr II. 1.3.1. — 3. Cf. Vr sū. 15, Cal. on Āp sū. 22.4.a. — 4. Cf. below Mn VI.1.8.3. — 5. Cf. Mn I.7.3.31, Vr sū. 13 (: the vyāghāraṇa of the rukma), Āp sū. 22.4.a (Cal.) : uttaranābhivat referring to VII. 5.4). — 6. Mn sū. 7 prescribes simply an abhim. with bhūḥ and passes over the abhicāra-practice mentioned below. — 7. Cf. Vr sū. 17. — A general rule is valid here: cityāṃ cityāṃ hiranyaśakalam upāsyati “Upon each layer he throws down a piece of gold”, Mb p.23.11–12 = Vr sū. II.1.8.8 (with apyasyati). — 8. Cf. Cal. on Āp sū. 24.2 — 9. Mb p.25.3 has dvīryajuḥ: dvābhyām Mn sū. 15. — 10. Cf. Āp sū. 24.4; differently Vr sū. 29, but sū. 30 refers to the Mb-passage cited above. — 11. As the Taittirīyakas place three retaḥsic-iṣṭs., the m. cited here belongs to the third one, cf. Āp sū. 24.3, s. also Vr. sū. 28.

§17. The placing of various iṣṭakās, a tortoise, the heads, etc. Mb III. 2. 7: p. 25. 11–p. 27. 10: Mn VI. 1. 7. 19–29, cf. Vr II. 1. 6. 31–7. 6, 11, 12, Āp XVI. 24. 7–27. 6.

[With Mm II.7.16: p.99.7–10 (from brhaspatiṣ tvā sādayatu to dhruvā sīda)] the (first) viśvajyotis-iṣṭ. is placed (p.25.11)¹: <Mn 1.c. sū. 9>. — [With Mm IV.9.14: p.134.10–11 (y.) the gharma-iṣṭ. is placed to the east of the viśvajyotis²: <20>.] — [With Mm II.7.16: p.99.16–17 the aṣādhā-iṣṭ. (cf. above Mn VI.1.2.13 and 16) is placed] with its characteristic three lines turned upward, and a person who is dear to him will prosper (p.25. 12, 15–16) : <21>; cf. Āp sū. 24.12–13 (Cal.). — Further it is said in Mb that this iṣṭ. should be made with the remainder of the clay used for the ukhā (p.25.15–p.26.1, cf. above §7,n.7). — Then a [spotted] tortoise (kūrma) is placed alive (p.26.1,2) with its head turned westward (p.26.4) [in front of the svayamāt. with Mm 1.c. p.100.3–5 (y.)³ after having been smeared

with sour milk mixed with honey with three mm. Mm 1.c. p.99.18–19, 20–21, and p.100.1–2]⁴: <22>. — A mortar (ulūkhala), one prādeśa in size and made of udumbara-wood (p.26.7,9), [after an abhim. performed with a v. given in full by Mn sū. 23 and Vr sū. 7.1 and the pounding of rice therein, is placed with two mm. Mm 1.c. p.100.10 (prat.) = I.2.9: p.18.17–18⁵ and p.100.11–12 to the southeast of the svayamāt., while the pestle (musala) is placed with Mm I.2.9: p.19.12–13] : <23 and 24>. — Then the ukhā (p.26.10), after having been filled with gravel (sikatā), sour milk, gṛṭa, and honey⁶ (p.26.13,15,16), is placed as far to the northeast of the svayamāt. (as the mortar and pestle is to the southeast) with Mm 1.c. p.100.13 (prat.) = I.7.8: p.54.12–13 and p.100.14–p.101.7]: <25>. — On this occasion Mb warns that one should not look at the empty ukhā (p.26.12–13).⁷ — [After having “yoked the fire” with two mm. Mm. I.7.17: p.101.8–9 and 10–11, he fills with Mm ib. 12–13] the openings (chidrāṇi) of the heads [with sour milk mixed with honey] and places hiranyaśakalas in them (p.26.18) [beginning with the right ear with y.: rce tvā Mm. 1.c. p. 101.14 and ending with the cut of the head (vikartana) with y.: sahasradā asi sahasrāya Mm ib. 16.]: <26>, cf. Vr sū. 7.5–8, Āp sū. 27.1–6. — [With Mm 1.c. p.101.17–p.102.1 he puts the human head (puruṣaśirṣa) turned westward and with its cut turned downward in the ukhā: <27>].⁸ — The human head is placed in the middle and around it the other heads (p.27.1–2) in close adherence (samīcīnāni) to the former for whom he wishes to be rich in cattle (p.27.2–3), but they should be placed apart (viśūcīnāni) from one another for one whom he wishes to be without cattle (p.27.4–6), cf. Āp sū. 27.8 [They are placed closely leaning on the ukhā with their ear-apertures and jaws, that is, the horse's head to the east, the bull's head to the west, the ram's head to the south and he-goat's head to the north, each with a special m. Mm 1.c. p.102.2–3, 4–5,6–7, and 8–9: <28>.] — The performer of the Ac should not go between [the heads and the svayamāt.], otherwise he would lose his life (p.27. 8–9). [If he does do, he should perform a japa with Mm II.13.11: p.162. 1–2⁹: <32>.] — Lastly with the utsarga-formulas,¹⁰ that is, Mm I.7.17: p. 102.10–p.103.5 he should perform the upasthāna (p.27.9) [to each of the heads in the same order as they have been placed]: <29>.

1. athaitā viśvajyotiṣaḥ pl., as there are three viśvaj.; for the second one, see below Mn VI.2.1.17 with viśvakarmā tvā sādayatu, etc. Mm 1.c. p.99.10–12, for the third one, see below Mn VI.2.2.8 with paramēṣṭhi tvā sādayatu, etc. Mm 1.c. p.99.12–16. — 2. Not mentioned here by Mb; but cf. Vr sū. 6.25, Āp sū. 24.14. — 3. The viniyoga of two mm. Mm 1.c. p.100.6–7 and 8–9 is not indicated, but they too seem to be employed here, cf. Vr sū. 6.36, Āp sū. 25.2.a and c. — 4. At least the second v. is alluded to by Mb p. 26.5 with the word dyāvāpṛthivīyayā. — 5. This m. seems to be referred to by Mb p.26.9 with vaiṣṇavyā. — 6. Or “gṛṭa or honey,”

cf. Vr sū. 7.2: madhunā ghṛtena vā. — 7. Cf. Cal. on Āp sū. 26.6 and 7. — 8. Vr sū. 7.6 has uttānam and paścādavakartanataḥ, cf. Cal. on Āp sū. 27.7. — 9. Cf. Vr sū. 7.14 and Cal. on Āp sū. 27.13. — 10. Cf. Cal. on Āp sū. 27.13.

§18. The offerings into the eye-sockets of the human head, etc.; the placing of various iṣṭakās. Mb III. 2. 8: p. 27. 11–p. 29. 2: Mn VI. 1. 7. 30–8, 6, Vr II. 1. 7. 7–21, Āp XVI. 27. 7–28. 4, 32. 1–2.

With Mm I.3.37: p.43.8–10 he performs two juhōtis on the human head, which he has placed (p.27.12), [first in the right eye-socket] with the first half of the v., [then in the left one] with the other half of it (p.27.4, 15–16): <Mn 1.c. sū. 7.30>. — Mn sū. 7.31 prescribes how to proceed when there is only the head of a goat (ajāsiras) instead of the five heads, cf. Mn VI.1.3.12; and Mn sū. 7.32, concerning the passage in the agnikṣetra, has been already mentioned above §17 towards the end. — The puruṣa-citi, that is, the piling of the iṣṭs. in the form of a human figure (puruṣasya pratimā) is not prescribed by Mb in this context, but see III.5.1: p.58.1–6 where the use of thirty-six iṣṭs. is mentioned. [According to Mn sū. 8.1–2 it is piled in the northern shoulder (aṃsa) of the agnikṣetra with twelve rounds (paryāya) Mm II. 13.4: p.168.7–15, each ending with tena chandasā, tena brahmaṇā, tayā devatayāṅgirasvad dhruvā sīda “With this metre, with this holy prayer, with this deity, sit thou firm in the way of the Angiras’s.” The iṣṭs. are placed three by three (tisras tisrah) with each paryāya, that is, each paryāya is employed thrice.] Cf. Vr sū. 7.7–10, Āp sū. 28.1–3 (Cal.). — [Here Mn sū. 8.3 prescribes the rite of the sarpanāmāni, that is, the piling of a serpent head in the northern part, apart (from the other heads) or only the anudeśana (see above Mn VI. 1.7.4: §16) to it.] Cf. Vr sū. 7.15, Āp sū. 27.22–23. — The apasyā-iṣṭs. are placed (p.27.17, p.28.2) [five by five with the paryāyas Mm II.7. 18: p.103.6–11 up to pāthasi sādāyāmi, in each of the quarters, while he steps from the east to the right (pradakṣiṇam), and the last five iṣṭs., that is.] the chandasyās by name are placed in the north (p.28.4 end–5,6) [with the fourth paryāya Mm 1.c. p.103.11–14 up to chandasā sādāyāmi]: <4>. Cf. Vr sū. 7.16–17, Cal. on Āp sū. 28.4. — The prāṇabhṛt-iṣṭs. are placed ten by ten obliquely (akṣṇayā) (p.28.6 end–7, 7 end–8, 9) [with five paryāyas Mm II.7.19: p.103.15–p.104.15 in the order: the spring (vasanta), summer (grīṣma), rains (varṣāṇi), autumn (śarad) and winter (hemanta), each paryāya ending with grhṇāmi prajābhyah “I grasp for offspring”; “obliquely placed,” that is, from the right shoulder (aṃsa) to the left buttock (śroṇi), from the right buttock to the left shoulder, and lastly in the middle]: <5>. Cf. Vr sū. 7.18–19, Āp sū. 32.1–2. — The saṃyat-iṣṭs. are placed (p.28.10,11) [with five paryāyas Mm II.7.20: p.104. 16–p.106.2, each ending with devahūtau “in the invocation of the gods” in the order: the east, south, west, north, and the zenith (ūrdhva) just as in the case of the prāṇabhṛt-iṣṭs. above]: <6>. Cf. Vr sū. 7.20–21. — Mb

p.28.12–p.29.2 contains the explanation of two vv. : lokam prṇa, chidram prṇa “fill the space, fill the hole” Mm II.8.1: p.106.3–4 and tā asya sūda-dohasaḥ “the (cows) abundantly streaming milk for him” Mm ib. 5–6, see above §13, n.7. — Mn VI.1.8.7–16 prescribes the placing of various iṣṭs. as well as the rites connected with them that take place at each piling (citi). In the following I give only a summary of the contents.

1. The ṛtavyā-iṣṭs. They are placed on the avakā-plants with Mm II. 18.12: p.116.3–16 consisting of six paryāyas in the order: the spring, summer, rains, autumn, winter and cool season (śīsira), beginning with madhuś ca mādhasaś ca vāsantikā ṛtū “Madhu and Mādhasa are two months of spring.” Two iṣṭs. are placed at each citi, four at the middlemost citi and each paryāya ends with indram iva devā abhisamviśantu “May they attend on them as the gods on Indra,” and the usual formula tayā devatayā . . . dhruvā sīdantām is each time added at the end: <7–8>. Cf. Vr sū. II.1.6.33–34, Āp sū. XVI.24.9; XVII.1.7; 2.1,10; 4.5 — 2. The saṃyāni-iṣṭs. With Mm II.8.13: p.116.17–p.117.3 up to antarikṣe sīda, two iṣṭs. are placed at each citi: <9>. Cf. Āp sū. XVI.24.8; XVII.1.6,18; 2.9;4.6,7. — 3. The ṛṣabha-iṣṭs. With tvām agne vṛṣabham . . . asthūri nau (sic) . . . = TS V.7.2.a (with no instead of nau), the second half = Mm IV.14.15: p.240.2 (with no). The iṣṭs. marked with various signs (cf. Mn sū. VI. 1.4.39) are used: <10>. Cf. Vr sū. II.1.8.7, Āp sū. XVI.33.7–34.2 (Cal. refers to Mb III.4.7: p.54.6); XVII. 1.10; 2.7,13; 9.3. — 4. The lokamprṇās are used for filling up the vacant space at the end of each citi, cf. e.g. below Mn sū. VI.2.1.7: <11>. Cf. Vr sū. II.1.8.7 (by the way sū. 8 contains a general rule, see above §16,n.7), Āp sū. XVI.33.7. — 5. The touching of the svayamāt.-place with Mm II.13.11: p. 162.3–5 and the juhōti upon it with Mm II. 13.12: p.162.6–7 up to kakṣasya adding yā ta iṣur yuvā nāma etc. Mm ib. 7–9 at each time: <12–14>. Cf. Vr sū. II.1.8.12–14 (agnihomas), see also sū. 16–18: the touching of the layer which marks the end of each citi, Āp sū. XVI. 35.2–4. — 6. The anum. for the citihoma at each citi, with a v. at each citi, but with two vv. at the last citi, using Mm II.13.13: p.162. 10–p.163.6: <15>. Cf. Vr sū. II.1.8.15 (citihomas), Āp sū. XVI.35.1. — 7. The touching of a dark or brown (śyāva) horse and the covering of the citi with dust (purīṣa) taken from the cātvāla-hole with Mm II.13.11: p.161.14–17 (at the end of each citi): <16>. Cf. Vr sū. II.1.8.9: aśvam śyāvam ālabhate, ib. 10 (the use of the purīṣa), Āp sū. XVI. 34.5–6: uttarataḥ kṛṣṇo ’śvas tiṣṭhati, śyāvo vā. — On the horse’s color, cf. also above §15.IV, n.3. On the other hand, Vr sū. II. 2.1.1 (at the beginning of the second citi) remarks: aśvam śvetam ālabhan citir upadadhāti “Touching a white horse he piles the citis.”

§19. I. The second citi. Mb III. 2. 9: p. 29. 3–17: Mn VI. 2. 1. 1 (marking the end of the first citi), 2–8, cf. Vr II. 2. 1. 1–6, Ap XVII. 1. 1–10.

[On the following day after the pravargya and the upasad-rite of the forenoon] the five āsvini-īṣṭs. are placed (p.29.4–5) [with Mm II.8.1: p.106. 7–p.107.8 in the quarters and the middle]: <Mn 1.c. sū. 2> — Then follows the placing of the [five] ṛtavā-īṣṭs. (p.29.6–7)¹ [with Mm 1.c. p.107.9–14 (yy.), sajūr devair vayunādhaiḥ, etc. (ib. 13–14) being added each time]: <3>. — Then follows the placing of the [five] vāyavyā-īṣṭs. (p.29.8–9) [with Mm II.8.2: p.107.15–16 up to ślokyā]: <4>. — Then follows the placing of the [five] apasyā-īṣṭs. (p.29.9–10)² [with Mm 1.c. p.107.16–17 up to vṛṣṭim eraya]: <5> — Then follows the placing [of the vasyā-īṣṭs.] of which four are laid on the eastern side and five by five on [the junctions (apyaya) of] the other sides (p.29.11,12–13) [with Mm 1.c. p.107.17–p.108.5, from kṣatram onward, 19 yy. in all]³: <6>. — [Mn sū. 7 and 8 mark the end of the second citi.]

1. Cf. Vr sū. 3–4 having pañca-pañca “five by five”. For the īṣṭs. of the same name, see above Mn VI.1.8.7–8 (§18). — 2. Cf. above Mn VI.1.8.4, perhaps here also “five by five.” — 3. The designation mūrdhanvatībhīḥ sādāyati Mb p.29.12 is probably a generalization from one of the yy. mūrdhā vayah Mm 1.c. p.107.18. Cf. Cal. on Āp sū. 8.a and b.

§19. II. The third citi. Mb III. 2. 9: p. 29. 14–p. 30. 14: Mn VI. 2. 1. 9–22, cf. Vr II. 2. 1. 7–15, Āp XVII. 1. 11–2. 7.

[On the following day after the pravargya and the upasad-rite of the forenoon begins the third citi <Mn 1.c. sū. 9>.] — [The rite of the placing of the second svayamāt. <10–15> is similar to that of the first, see above Mn VI.1.7.7–13,] though Mb p.29.14–15 mentions only the first half of the v. Mm II.8.3: p.108.6–7, cf. <11>. — [To be noticed is, however, that there does not appear an ignorant brāhmaṇa, nor does the giving of a boon (varadāna) take place¹: <13>.] — [Here is undertaken the placing of a piece of gold (hiraṇyasaṅkalpa) to the east with Mm II.7.15: p.98.7–9 up to mā pāhi as well as of an īṣṭ. marked with a circle to the west with Mm II.8.14: p.117.9–12 up to dhruvā sīda, in the same way as above Mn VI.1.7.14: <16>, and further the placing of the viśvajyotis-īṣṭ. with Mm II.7.16: p.99.10 up to dhruvā sīda, in the same way as above Mn VI.1.7. 19: <17>.] — The five diśyā-īṣṭs. are placed (p.29.17,18–19) [in the quarters and the middle with Mm II.8.3: p.108.8–9 up to ūrdhvā dik]: <18>. — Ten īṣṭs. are placed on [the junction of] the eastern side (p.29.20) [with Mm 1.c. p.108. 9–11 from āyur me pāhi to jyotir me yacha]² and twelve by twelve [on the junctions of the other sides] amounting to thirty-six īṣṭs. (p.30.5, cf.6–8) [with Mm 1.c. p.108.11–19 from mā chandaḥ to viśve devā devatā]³: <19>.

—The [seven] ādityadhāman-īṣṭs. [= ° dhāmnī-īṣṭs.] are placed [in the east] with mūrdhāsi rāṭ [etc. up to kṣemāya tvā Mm 1.c. p.108.19–p.109.1]⁴ and the [seven] aṅgirodhāman-īṣṭs [= ° dhāmnī-īṣṭs.] with yantrī rāṭ, etc. [up to poṣāya tvā Mm 1.c. p.109.1–2] (p.30.8,9–10), and both sets of īṣṭs.⁵ are laid in a symmetrical position (samāvabhājah sādāyati) (p.30.11): <20>. For a person whom he hates he should place them obliquely (p.30.12–13)⁶. — [Mn sū. 21 and 22 mark the end of the third citi.]

1. But cf. Āp sū. 12: aviduṣā brāhmaṇa saha “together with an ignorant brāhmaṇa.” — By the way insert tvā between viśvakarmā and sādāyantu Mm II.8.14: p.118.1, cf. Mn sū. 12. — 2. Called prāṇabhṛtaḥ by Āp sū. 2.3. For the īṣṭs. of the same name, cf. above Mn sū. VI.1.8.5. — 3. The first three yy.: mā chandaḥ, sū. pramā chandaḥ and pratimā chandaḥ are mentioned Mb p.30.3. Called bṛhatīḥ by Āp sū. 2.4, cf. the word bṛhatī occurring in Mb p.30.6. and 7. — 4. Referred to with mūrdhanvatībhīḥ sādāyati by Mb p.30.13; for the expression, cf. above §19.I, n.2. — 5. Called vāḥkilyāḥ by Āp sū. 5. — 6. This abhicāra is not mentioned in Mn, but cf. Vr sū. 14, Āp sū. 2.6.a (Cal.).

§20. I. The fourth citi. Mb III. 2. 10: p. 30. 15–p. 31. 9: Mn VI. 2. 1. 23–28, cf. Vr II. 2. 1. 16–18, Āp XVII. 2. 8–13.

[After the pravargya and the upasad-rite of the forenoon, the akṣṇayā-stomīyā-īṣṭs. are placed with yy. contained in Mm II.8.4: p.109.3–8]: the trivṛdvatī (: y. no.1) in the east (p.30.15), the saptadaśavatī (: y. no.3) in the south (p.30.16), the pañcadaśavatī (: y. no.2) in the north (p.30.18–19), ekaviṃśavatī (: y. no.7) in the west (p.30.19–20, p.31.2)¹, [and the pañcaviṃśavatī (: y. no.11) in the middle. The remaining fifteen īṣṭs. are laid three by three in the same places]: <Mn 1.c. sū. 23>. Cf. Vr sū. 17 with the same order as above, Āp sū. 9 with the order: east, south, west, and north. — With the mm. agner bhāgo ’si . . . trivṛtstomāḥ, etc., the spṛt-īṣṭs. are placed (p.31.4–5). [According to Mn sū. 24 ten yy. contained in Mm II.8.5: p.109.9–p.110.5 are employed in the following way: one īṣṭ. in the east with agner bhāgo ’si, etc., one in the south with indrasya bhāgo ’si, etc., one in the north with nṛcakṣasām bhāgo ’si, etc., one in the west with mitrasya bhāgo ’si, etc., and lastly one in the middle with adityā bhāgo ’si, etc., while the remaining five īṣṭs. are laid in the same places.]² — With the mm. ekayāstuvata prajā adhiyanta, etc., the īṣṭs. called sṛṣṭayah are placed (p. 31.7–8). [According to Mn sū. 25, seventeen sṛṣṭi-īṣṭs. are laid in the middle with the yy. Mm II.8.6: p. 110.6–p.111.2.] Cf. Vr sū. 17, Āp sū. 11. — [Further, the fifteen vyuṣṭi-īṣṭs. are placed three by three in the quarters and the middle with Mm II.13.10: p.159.14–p.161.13: <26>.] Cf. Vr sū. 17, Āp sū. 12. — [Mn sū. 27 and 28 mark the end of the fourth citi.]

1. Mb p.30.20–p.31.2 prescribes again the placing of the trivṛdvatī (: y. no.1) in the east, the pañcadaśavatī (: y. no.2) in the south, the saptadaśavatī (: y. no.3) in the north and ekaviṃśavatī (: y. no. 7) in the west. But it is not clear how to harmonize this statement with the previous one. — 2. The spṛtaḥ are not separated from the akṣṇayāstomīyāḥ (above Mn sū. 23) in Āp sū. 9 while Vr does not speak of the spṛt-iṣṭs.

§20. II. The fifth citi (beginning). Mb III. 2. 10: p. 31. 9–20: Mn VI. 2. 2. 1–2, cf. Vr II. 2. 1. 19–21, Āp XVII. 3. 1–4.

[After the pravargya and the upasad-rite of the forenoon, the asapatnā-iṣṭs. are placed with the mm. contained in Mm II.8.7: p. 111.3–11:] with agne jātān, etc., in the east (p.31.9–10), with praty ajātān, etc., in the west (p.31.11),¹ with catuṣcatvāriṃśī, etc., in the south (p.31.12–13), with ṣoḍaśī stomā ojo, etc., in the north (p.31.13–14), with agneḥ puriṣam, etc., in the middle (p.31.16) [behind the svayamāt.]: <Mn 1.c. sū. 1>. Cf. Vr sū. 20, Āp. sū. 2–3. — The [forty] virāj-iṣṭs. are placed (p.31.18) [ten by ten on the junctions with Mm 1.c. p.111.12–p.112.4]: <2>. Cf. Vr sū. 21 (without mentioning the name), Āp sū. 4.

1. We expect to have sahasā jātān, etc. = Mm. 1.c. p.111.5–7 instead of praty ajātān, etc. = Mm ib. 3, i.e., the second pāda of the first v.; correctly cited by Mn sū. 1.

THE ATIRĀTRA ACCORDING TO THE KAUŚĪTAKI BRĀHMAṆA

E. R. Sreekrishna Sarma

THE TWO BRĀHMAṆAS Aitareya (AB) and Kauśītaki (KB) which belong to the Ṛgveda mainly deal with the *hautra*, or the verses to be recited by the hotā, in various rituals. Both of them were referred to by Yāska (Nirukta, 7.17, 8.4, 8.22, 12.8, 12.14, etc.) and Pāṇini (Aṣṭādhyāyī, 5.1.62). Another Brāhmaṇa, Pañḍya, believed to belong to the Ṛgveda, is not available now except for some scattered references and quotations. One may agree with the view expressed by Keith that AB or most of it was chronologically prior to KB, the former being less systematic and scientific in the arrangement of topics and in dealing with the rituals. Udaya, the commentator on KB, points out the main difference between the two Brāhmaṇas, and quotes a passage from Ṣaḍguruśiṣya, a commentator on AB, to support his statement. He states that while AB focuses its attention on the ritual called Prāyaṇīyātīrātra (a part of the Gavāmayana sattra), and begins with the ceremony of consecration, KB covers the entire field of śrauta rites in the order of their performance (*anuṣṭhāna-krama*), not in the order of their mention (*pāṭhā-krama*) in the Yajurveda. Accordingly, KB begins with the installation of fires (Agnīdhāna), deals with the various iṣṭis, and finally elaborates the different types of Soma rituals, including the sattras (see the introductory part of his commentary, as well as the verses at the beginning of his commentary on KB, Chap. XXII). KB does not, however, deal with certain rituals, like Aśvamedha and Rājastūya, to which importance is given in AB.

The Kauśītakins are in a minority compared to the Aitareyins. The Kauśītaki śākhā is now available in Kerala, Gujarat, and to a more limited extent in Maharashtra. The Aitareyins follow the Śrautasūtras of Āśvalāyana, the Kauśītakins those of Śāṅkhāyana. There have been some controversies and doubts as to the identity of the śākhās of the Kauśītakins and Śāṅkhāyanas. The texts of the Brāhmaṇa, Āraṇyaka, and Śrautasūtras belonging to these schools as preserved traditionally in the South and North vary somewhat. However, it seems likely that the śākhās do not differ, the variations being due to the influence of other śākhās in the respective regions. For instance, the Śāṅkhāyana tradition of the North shows affinity with the Vājasaneyins and Maitrāyaṇīs, whereas the Kauśītaki tradition of the South has affiliations with the Taittirīya and Jaiminiya śākhās. This is not the proper place to discuss this problem, but an interesting fact may be mentioned here. There is a tradition that the Nambudiris, the brahmins of

Kerala, came down to the South from or through Gujarat, trekking along the west coast. If this was the case, the Kauṣītaki or Śāṅkhāyana śākhā might have migrated from the North to the South and acquired its variations through the influence of the South, as indicated above. The śākhā has been known in Kerala solely by the name Kauṣītaki for the past four or five centuries. The author of the Śrautasūtras of this śākhā is unanimously accepted as one Suyajña, whose name figures in the list of Ṛṣis for whom the Jaiminiyas perform the *tarpaṇa*. Even in Kerala the Kauṣītakins are fewer in number as compared to the Aitareyins. In their rituals they both follow Baudhāyana for the Ādhvaryava and Jaiminīya for the Audgātra.

The Atirātra combined with Agnicayana is a Soma ritual. KB deals with the Soma rituals in twelve chapters, beginning from the consecration of the Yajamāna and ending with the Āśvina recital. Here follows a summary of the rites described in these chapters:

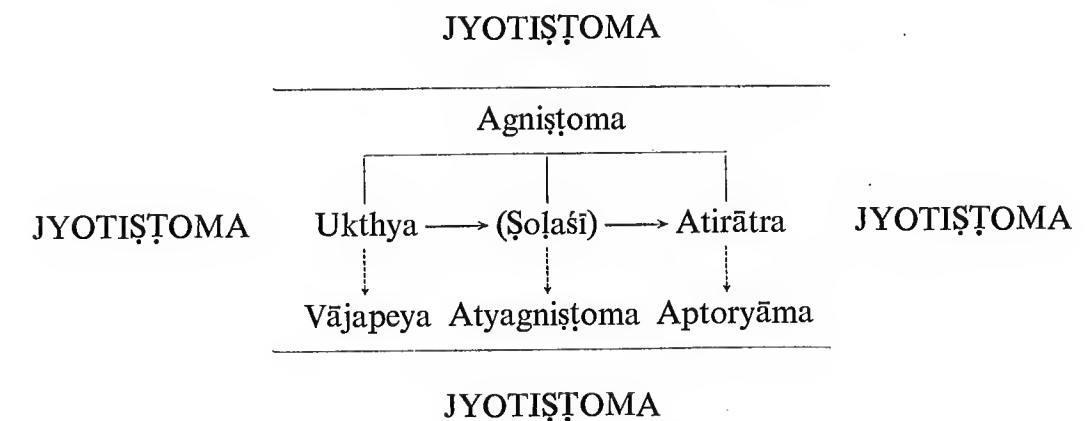
Chapter VII.	Consecration of the Yajamāna; the iṣṭis of Dik- ṣaṇīyā, Prāyaṇīya; the purchase of the Soma creepers.
Chapter VIII.	The Ātithya-iṣṭi; Pravargya and Upasads.
Chapter IX.	Bringing forth the fire; setting up the oblation- receptacles; bringing forth the fire and Soma.
Chapter X.	The victim for Agni and Soma; the nature of the sacrificial post; the rites belonging to it and the killing of the victim and the oblations.
Chapter XI.	The morning litany (<i>prātaranuvāka</i>); the verses to be used and their order of recitation.
Chapter XII.	The oblation of <i>vapā</i> .
Chapter XIII.	Entering of the <i>sadas</i> by the priests; the fivefold oblations (<i>haviṣpaṅkti</i>); the cups for the twin deities; Prasthita yāga of the Soma; partaking in its eating; calling of the Acchāvāka; and the Seasonal cups (<i>rtugraha</i>).
Chapter XIV.	Morning pressing; the Ājya and Praūga śastras.
Chapter XV.	Midday pressing; the Marutvatīya and Niṣkevalya śastras.
Chapter XVI.	Third pressing; the Vaiśvadeva and Āgnimāruta śastras; Ukthya śastras.
Chapter XVII.	Śoḷaśī śastra ¹ and the Atirātra rites.
Chapter XVIII.	Āśvina śastra and the conclusion of Atirātra.

In order to provide first-hand information on the recitals (śastras) con-

¹ Editor's Note: The KB text uses throughout the form "śoḷaśī," which has been retained here, though the form "ṣoḷaśī" has been used in other parts of this book.

nected with the Atirātra, as envisaged by the Kauṣītaki Brāhmaṇa, four chapters (XIV to XVII) and the first four sections of Chapter XVIII will be translated in Part IV (pages 676–699). In the remainder of the present article I shall survey the explanations given in the Brāhmaṇa.

The primary source of all Soma rituals is known by the name Jyotiṣṭoma: *jyotis* means light. There are four stomas or clumps of chants and recitals. They are the Tripartite (*trivṛt*), the Fifteen (*pañcadaśa*), the Seventeen (*saptadaśa*), and the Twenty-One (*ekaviṃśa*). The numbers here refer to the *ṛk* verses, on which the chants are based. These four chants, sung by the Sāmavedins and followed by the recitals of the *ṛk* verses by the hotā, light up the heavenly world for the yajamāna. Hence they are known collectively by the name Jyotiṣṭoma. The Jyotiṣṭoma branches off into seven types of rituals, the differences being based on the modes of their conclusion, which are known by the name *saṁsthās*. There are seven *saṁsthās*: Agniṣṭoma, Atyagniṣṭoma, Ukthya, Śoḷaśī, Atirātra, Vājapeya and Aptoryāma. The relationship between these may be pictured as follows:



The seven *saṁsthās* are said to be the "splendors" (*vibhūtis*) of the Jyotiṣṭoma. The Agniṣṭoma is the source of all other *saṁsthās*. It gives birth directly to three other *saṁsthās* (Ukthya, Śoḷaśī and Atirātra), all of which are both sources as well as derivatives: they are derived from the Agniṣṭoma, but are the sources of Vājapeya, Atyagniṣṭoma, and Aptoryāma, respectively, which three are only derivatives (*vikṛti*). This explanation parallels Sāṃkhya theory, according to which one primary source (*mūlaprakṛti*), seven "sources cum derivatives" (*prakṛti-vikṛtis*), and sixteen "sole derivatives" constitute the essentials (*tattvas*). The ritual that concludes with twelve chants followed by twelve recitals is the Agniṣṭoma. Three more chants and recitals added to these make the Ukthya, and by adding one more to these fifteen we get the Śoḷaśī conclusion. The Atyagniṣṭoma consists of thirteen chants and an equal number of recitals (Agniṣṭoma plus Śoḷaśī minus Ukthya becomes Atyagniṣṭoma). When thirteen chants as well recitals are added to the Śoḷaśī we get the Atirātra, which consists of twenty-nine chants followed by

an equal number of recitals. Vājapeya results by adding one more chant and recital to the Śoḷaśī. The Aptoryāma has four chants and four recitals more than the Atirātra. So the total number of chants and recitals in the Aptoryāma is thirty-three. KB does not deal with the Atyagniṣṭoma, Vājapeya, and Aptoryāma, as they are "sole derivatives."

The Agniṣṭoma is described as commencing with the Ājya śastra and ending with the Āgnimāruta, involving twelve chants and twelve recitals, each recital being preceded by a chant. As there are three pressings of the Soma creeper for a Soma ritual, these chants and recitals are distributed among those three. The morning pressing has two chants and two recitals, the Ājya and the Praūga. The midday pressing has five chants and five recitals: the hotā recites the two main śastras, the Marutvatiya and the Niṣkevalya, and his associates, maitrāvaruṇa, brāhmaṇacchamsī, and acchāvāka, each recite one śastra. All of these are preceded by chants. In the third pressing, too, besides the main śastras (the Vaiśvadeva and the Āgnimāruta) recited by the hotā, the associates also recite one śastra each. All these recitals are preceded by the related chants, and thus there are five chants and five recitals here as well. The total Agniṣṭoma thus consists of twelve chants and twelve recitals. The first of these, the Ājya śastra, in which the hotā recites a total number of three hundred and sixty verses, includes the recitals of the mantras called Silent Muttering, Silent Recital, Prior Light, the hymn (RV. 3.13), the Śastra Vigor, and the Offering Verse; thus the Ājya śastra is sixfold. The Prior Light, or the Nivids, are to be uttered before the recital of the hymn in the morning pressing. The first hemistich of the verse of the hymn is recited dividing each quarter separately, while the second hemistich is recited by combining the two quarters and ending with the *pranava*. The adhvaryu fills ten cups with the Soma juice during this pressing. The first and last verses of a recital (hymn) are always repeated thrice. In many places, as prescribed by the Śrautasūtras, the hotā utters a "call-out" (*śomsāvo*, etc.) to which the adhvaryu responds (*pratigrṇāti*) in the form "śomsāmo daivo," etc. These "call-outs" and "encouragements" vary in their form in the different pressings. The second śastra, called the Praūga, is recited during the morning pressing and consists of twenty-one verses (RV 1.2 and 3).

The first śastra for the midday pressing is the Marutvatiya, which consists of 2 triplets, 2 mingled verses recited by repeating the quarters, 3 isolated verses (RV 3.20.4; 1.91.2; 1.64.6), the hymn (RV 10.73), and the Nivids placed in the middle of the hymn. This śastra involves 6 meters, the anuṣṭubh gāyatrī, br̥hatī, uṣṇih, triṣṭubh, and jagatī. The second recital, called the Niṣkevalya, is considered to be the exclusive property of Indra. It consists of 2 mingled verses (recited by repeating the quarters), the triplet (RV 1.19.9–11), 2 verses (RV 10.74.6; 8.3.1), the hymn consisting of 15 verses (RV 1.32), and the concluding verse (RV 3.47.4). There are two different methods regarding the performance of this śastra: some chanters make

the basis of their chants the Rathantara sāman, while others use the Br̥had. The initial strophes therefore vary, according to this difference in the basis of the chants. The Bahiṣpavamāna, which is chanted during the midday pressing, consists of 190 ṛks in all.

In the third pressing, the main śastras are the Vaiśvadeva and the Āgnimāruta, which are recited by the hotā. Prior to the recital of the Vaiśvadeva śastra, cups for the Ādityas and Savitr are filled. There are also rites related to the Manes. The śastra itself consists of four hymns (RV 4.54; 1.59; 1.111; 1.89) and four isolated verses (RV 1.4.1; 10.123.1; 10.63.10; 4.50.6) with sixteen call-outs in between. In the third pressing the concluding verse of the recitals is invariably RV 1.89.10. After this śastra there are two oblations, one with melted butter and the other with Soma juice. A cup for the deities with their wives (*pātnīvata*) is also offered here. The last main śastra of the Agniṣṭoma is the Āgnimāruta, which consists of twenty-one call-outs in between and the complete hymns of RV 3.3; 1.87; 1.143, besides twenty-eight verses scattered in various hymns. KB mentions three views regarding the main deity of the Soma ritual ascribed to Madhuka, Gauśra, and Kauṣītaki, the first holds Soma to be the main deity, the second Indra, and the third Agni and Indra together. With these twelve śastras the Agniṣṭoma ends.

The Ukthya śastras are three in number and are recited by the three associates, one each: together with the śastras of the Agniṣṭoma, the total number of śastras becomes fifteen, which constitutes the Ukthya samsthā. The Śoḷaśī is the sixteenth śastra, as the name indicates. The verses in various meters recited in this śastra are to be reckoned as in anuṣṭubh meter and there are, in total, forty anuṣṭubhs. There are only three call-outs in this śastra.

After the recital of the Śoḷaśī, the Atirātra rites begin. Here the recitals are to be performed by the hotā and his associates, in turns, and consequently these are called "the night recitals in rotation" (*rātri-paryāya-śastras*). The adhvaryu and the brahman have their fixed duties during these recitals. The hotā and his associates also have to wake up during the night and keep the fires lighted.

After this comes the Āśvina śastra, where one thousand verses are to be recited so as to make one thousand br̥hatīs. This śastra chiefly consists of the verses used for the Prātaranuvāka with a few omissions and commissions that are listed in ŚSS 9.20 and explained in the bhāṣya on it.

The Brāhmaṇas are mainly explanations of the ritual procedure in its details. Some explanations appear to be rather strange and even naive, but in actual fact they are not so. There is sound logic behind them, although to understand and appreciate it, the basic thinking of the vedic writers must be kept in mind. The composers of the Brāhmaṇas view the universe, the act of ritual (yajña), and the performer of the ritual as one and the same. Therefore these explanations are to be understood at three different levels

as applicable to the physical universe, the metaphysical concepts, and the theological beliefs. These levels are termed *ādhibhautika*, *ādhyātmika* and *ādhidāivika*, respectively. In all cases of explanations, however, these three levels may not all be clearly discernible: some explanations are given on the basis of one level of understanding, while the others are based on the other levels. Take the example of the three pressings in a Soma ritual. They are not only equated with the three worlds, but also with three meters (*gāyatrī*, *triṣṭubh*, and *jagatī*, respectively) as well as three deities (Agni, Indra, and Savitr, respectively). Again the three deities are expanded to thirty-three and equated with the *virāj* meter, which consists of thirty-three syllables. The term *virāj*, which means to "shine splendidly," is explained by equating *virāj* with prosperity and richness in food. It might be helpful to cite a few examples of this nature found in the portion of KB given here in English translation.

Nivids are the short mantras uttered in between the verses of a recital. They are equated with the sun (based on the etymology of the term *nivids*, "one who reveals forth" *nivedayan*), and the prescription of reciting them at the beginning, in the middle, and at the end of the three pressings, respectively, finds a parallel in the course of the sun through the sky. In addition, they are said to symbolize food that is placed in the middle of the body. Therefore they form the nourishment of the ritual, just as food nourishes the body. The transposing of the quarters of different verses in the recitals is not only explained by the simile of intertwining the cords of a chariot for firmness, but also as connected with the operation of the three vital breaths, *prāṇa*, *apāṇa* and *vyāna*, which function in unison.

The most interesting aspect of these explanations is the comparison of the ritual to a human being, whereby the limbs and functions of the living are equated with parts of the ritual hall and the performance of the ritual. In connection with the *paryāya śāstras* recited in the *Atirātra*, the intimate connection of the priests with one another as well as with the ritual is explained in this way (see the translation, XVII 5 and 6, pp. 694-695). When understood as based on the three levels mentioned above, the explanations of the *Brāhmaṇas* could be seen as a result of an integrated insight on the part of the composers.

There are only a few mythological legends referred to in the portion of KB presented here. They are: (1) the killing of *Vṛtra* by Indra, which is to be understood, following *Yāska*, as the release of water from the clouds after breaking them; (2) the legend of the *Ṛbhus*, who were first human beings, and afterwards attained divine stature by their good deeds and were admitted to the Soma ritual along with other gods; and (3) the bringing of Soma by *Gāyatrī* from the heaven where it was protected by the *Gandharvas*.

I would like to draw attention to two interesting statements occurring in the portion of KB presented here. The first is socially significant: it is indicated that the brahmins and the *kṣatriyas* do not have a fixed place of

residence, while the *vaiśyas* enjoy such a facility. The second is philosophical and poetical: it is said that the whole universe is nothing but "oil and light." Philosophically this may give expression to the interdependence of the inert and the spirit, which makes it possible for the universe to exist. At the same time, the image and sentiment evoked by the words "oil" and "light" heighten the esthetic experience derived from this statement.

RITUAL PREPARATION OF THE MAHĀVĪRA AND UKHĀ POTS

Yasuke Ikari

THE PRELIMINARY RITES OF the Agnicayana begin almost a year before the construction of the great five-layered Agni altar of brick, which is the very core of the Agnicayana rite. Within this series of preliminary rites, a special clay artifact called the ukhā plays a central part. Sacred fire is kept in it and the sacrificer, throughout the period of his consecration, repeatedly uses it to perform the rites of viṣṇukrama and vātsapra. Finally, just before the construction of the altar begins, the ukhā is buried, with a human head in it, under the altar ground.

After the formal opening with the Savitr oblation, which aims at securing the success of the entire Agnicayana rite, the ceremony begins with the ritual preparation of this ukhā vessel.¹ The process of procuring its materials, and kneading, baking, and fumigating them, are described in detail by the ritual texts.² These documents refer to this process of preparing the ukhā vessel as Ukhāsambharaṇa (Us). While this description furnishes us valuable cultural data on aspects of pottery technology in ancient India³, we have another source, from the ritual documents, on a very similar type of clay artifact, the mahāvīra or pravargya of the Pravargya rite.

The Pravargya rite⁴ is, within the structure of śrauta rituals, as we learn from the extant Vedic literature, one of the introductory rites of the Agni-ṣṭoma, the basic type of all the Soma rituals. It essentially consists in the offering of hot milk to the Aśvins, in which the clay vessel called mahāvīra/pravargya plays a very important role. The rite may be divided into five

¹ This is what the black YV tradition has. In the white YV tradition the animal sacrifice comes first, and the ceremony of Us follows.

² BŚS 10.1-8; ĀpŚS 16.1-6.1; MānŚS 6.1.1.1-1.2.22; HirŚS 11.1. 1-67; VārŚS 2.1.1-48; VaikhŚS 18.1-2; KŚS 16.2.1-4.26; VŚS Nos. 47, 48, 56, 57 (*Acta Orientalia* 4), Nos. 103a-b, 104-107 (*Acta Orientalia* 6); MS 3.1.1-8; KS 19.1-7; KapS 29.7-30.5; TS 5.1.1-7; ŚB 6.3-5.

³ Cf. C. G. Kashikar, "Pottery in the Vedic literature," *Indian Journal of History of Science* 4.1-2 (1970), pp. 15-26; W. Rau, *Töpferei und Tongeschirr im vedischen Indien* (Wiesbaden, 1972).

⁴ Cf. R. Garbe's description in ZDMG 34 (1880), pp. 319f. (based upon ĀpŚS only); J.A.B. van Buitenen, *The Pravargya* (Poona, 1968; description and study based upon all the extant Vedic literature). On the other studies, see pts. 1-7 of van Buitenen's study. Also cf. C. G. Kashikar, "Apropos of the Pravargya," *CASS Studies* 1 (1972), pp. 1-10; and "The Avāntaradikṣā of Pravargya," *BDCRI* 25.3-4 (1976), pp. 66-72.

sections: preparation of the mahāvīra vessel, heating of the vessel over the fire, milking of a cow and a goat, offering of the two kinds of milk and disposal of paraphernalia.

In the following, attention will be focused on the first section, that is, the preparation of the special type of clay artifact, the rite usually called Pravargyasambharaṇa (Ps). In fact, the description of Ps in the śrautasūtras shows many striking parallels with that of Us. Investigation of the śrautasūtras of the Yajurveda further reveals the existence of many word-to-word parallel passages between these two rites as given in each sūtra. The existence of so many closely parallel passages may lead us to the impression that either of the two might have borrowed its own description from the other. I shall attempt to make a closer investigation of this point by examining the prescriptions on Us and Ps from the Baudhāyana Śrautasūtra, the oldest extant śrautasūtra belonging to the Yajurveda tradition.

The following is a summary of Us:

- A. Preparations (BŚS X.1: 1.1-19): Before the formal opening, the collection and arrangement of the materials for making the clay artifact and whatever is connected with it.
- B. Formal opening (*Ibid.*, X.1-2: 1.19-2.2): Butter oblation to Savitr.
- C. Ritual procession to the site of clay and procuring of it.
 - a. (*Ibid.*, X.2: 2.2-15): Procession from śālā to the east with a horse and an ass in front; dialogue with a vaiśya man guarding an anthill; the arrival at the site.
 - b. (*Ibid.*, X.2-4: 2.15-3.20): Digging clay; wrapping it with a lotus leaf and an antelope skin.
 - c. (*Ibid.*, X.4: 3.20-4.7): Returning the same way as they came with the clay on back of the ass; dialogue with the vaiśya man; placing the clay on the site where molding of the artifact is taking place.
- D. The molding (*Ibid.*, X.5-6: 4.18-6.9): Molding of three ukhā vessels, drying them and fumigating them by means of horse dung.
- E. The baking (*Ibid.*, X. 6-8: 6.9-7.18): Baking of the molded vessels in a pit dug in the ground.
- F. Rites of reparation (*Ibid.*, X. 8: 7.18-8.5): In case the vessels might be broken during the preparation procedures, they are repaired or made again according to the prescribed manner.

The corresponding portions of Ps to the above procedures of Us:

- A. BŚS IX.1: 265.1-266.2

- B. *Ibid.*, IX.1-2: 266.2-7
 C. a. *Ibid.*, IX.2: 266.7-13
 b. *Ibid.*, IX.2: 266.13-267.16
 c. *Ibid.*, IX.3: 267.18-268.4
 D. *Ibid.*, IX.3: 268.4-269.4
 E. *Ibid.*, IX.3-4: 269.4-270.11
 F. *Ibid.*, IX.4: 270.11-19.

Although the prescriptions of both rites exhibit many striking parallels in every corresponding procedure, there are some divergences between them. In A, Us prepares clay alone, while Ps adds four more kinds of materials to the clay: earth dug out by wild boar, an anthill, earth on which a bunch of *ūtika* or *ādāra* grass is placed, and a pot of goat milk. Ps has *pūrvaśānti* before B.⁵ And just before the formal opening of B, every door of the *śālā* is shut and the sacrificer's wife (*patnī*) is sent to the *patnīśālā* and is shut off from the ritual scene. Whenever water is used in Us, hot water is prescribed instead in the corresponding place of Ps through the rite.⁶ In C, Ps does not accompany any animal in the procession.⁷ Further, no one is waiting on the way to the site of clay, so no dialogue takes place on the way to and from the site. Therefore, in contrast with the simple setting of Ps, Us is rather complex and even dramatic.⁸ In D, E, and F, the ritual performances are almost the same. Such close parallels between these two rites cannot be due to chance, and we may safely assume that there must be intentional borrowing between Ps and Us of BSS.

In my opinion, Us presupposed Ps, borrowed from the latter, and adapted it to the new context of the Agnicayana rite. In the following I shall point out some parallel passages that will support this hypothesis.

First, mention should be made of the function of a hut, in which the clay artifacts (*pravargya*/*mahāvīra* in Ps; *ukhā* in Us) are molded.

A round mound of earth is made to the east of the northern section of

⁵ Van Buitenen, pp. 55, 63.

⁶ On the significance of this rule, see van Buitenen, p. 30.

⁷ But Ps sections of the new Taittirīya Śrautasūtras prescribe the accompaniment of some animals: for instance, a he-goat and a horse (ĀpŚS 15.1.4); these two plus a bull (BhārŚS 11.1.9). Considering the facts that the corresponding brāhmaṇa portions do not mention them, and that no mantra referring to them is found in the mantra portions, this practice seems to have been introduced into the rite somewhat later, possibly under the influence of the parallel sections of the Agnicayana rite. In addition, some Pravargya sūtras of ĀpŚS presuppose those of the Agnicayana (15.1.4; 3.13; 19.1), while a sūtra of the latter rite (16.24.15) clearly presupposes the former. The same situation can also be pointed out in the other younger sūtras. At the time of these new Taittirīya sūtras at least, the similarity and correspondence between Ps and Us must have been well recognized.

⁸ On the interpretation of section C of the Agnicayana, see J. C. Heesterman, WZKSO 11 (1967), pp. 35-41.

the *śālā*, it is enclosed on all sides, and a door is made to the north (Ps: BSS IX.1: 265.13-16, Us: *Ibid.*, X.1: 1.11-14; exactly the same prescription in both texts).⁹ The purpose of this enclosure in Ps seems to be to exclude the sacrificer's wife and other nonqualified people from the ritual process of the preparation of the clay artifacts. Before the formal opening with the Savitr oblation, all the doors of the *śālā* are closed and the sacrificer's wife is brought into her own quarters (*patnīśālā*), which adjoin the *śālā* to the west and are screened off.¹⁰ Also, before the start of the rite of *mahāvīra* heating, the *Vṛṣalas*¹¹ are driven out of the *śālā*, and the ritual priests and sacrificer's wife are called inside. Then the doors of the *śālā* are closed and the wife is confined to her own quarters again.¹² These prescriptions are clearly connected with one of the restrictions peculiar to the mystical rite of the Pravargya: women and *śūdras* are entirely excluded from the Pravargya rite.¹³ The sacrificer's wife is confined to her quarters in order that she not see the *mahāvīra* vessel. This is explicitly stated in the following sūtra passage: "[After the *mahāvīra* vessels are baked, they are soaked with water]. And when their hissing stops, then he [*scil.*, the *adhvaryu* priest] sets them down on the basket, covers them with the black antelope skin, and hangs them up in the sling in the northern part of the *śālā* in such a way that the sacrificer's wife does not see [them]."¹⁴ The enclosure around the molding site of the *mahāvīra* vessels is explained by the mystical character of the Pravargya rite: the enclosure is made with the intention of preventing disqualified persons from seeing the *mahāvīra* vessels that are being born inside of it.

In the Pravargya rite, it is thus necessary, owing to the mystical character of the rite itself, to exclude those who are not entitled to participate in the ritual performance. In the Agnicayana sūtra, however, we are not given any clear reason why there is such an enclosure around the molding site of the *ukhā* vessel. Although the prescriptions of Us are closely parallel with those of Ps, the above rules concerning the exclusion of women and *śūdras* are entirely dispensed with. In other words, Ps and Us share exactly the same

⁹ For the comparison with the descriptions of other śrautasūtras, see van Buitenen, p. 13f. But from Baudhāyana's prescription the location of the hut is not inside the *śālā* but outside of it: *uttaraṃ śālākhaṇḍam agreṇa* means "to the east of the northern section of the *śālā*," since nothing must intervene between the sun and the pravargya/*mahāvīra* artifact.

¹⁰ BSS 9.1: 265.20-21.

¹¹ *Vṛṣalas* are not Aryans and are referred to often in contrast with the latter. They seem to have been treated as the *śūdras*; cf. BĀU 6.4.13, GobhGS 3.5.34, and BGS 2.3.6.22.

¹² BSS 9.5: 272.13-17.

¹³ Cf. BhārŚS 11.2.17, ĀpŚS 15.2.9 et al. On this and other restrictions peculiar to the Pravargya rite, see van Buitenen, pp. 29f., 40f.

¹⁴ BSS 9.4: 270.16-19. On treatment of the sacrificer's wife at the disposal of paraphernalia, cf. van Buitenen, p. 124 n.2.

series of sūtras that prescribe the installment of special ceremonial area, in which the most important clay artifacts are to be prepared. But, while we may understand its *raison d'être* in Ps from the taboo peculiar to Ps, we are at a loss as to why the special ceremonial area is made in Us. Probably Us introduced these prescriptions from Ps, while omitting the rules concerning the mystical elements of the Pravargya rite.

To add one more instance from the paraphernalia: after the vessel is baked, milk is poured over it. On this occasion, two kinds of milk are used, a cow's and a she-goat's.¹⁵ These two play an important role in the entire Pravargya rite, since both are used as indispensable oblations at the most important ceremony of this ritual, the offering to the Aśvins.¹⁶ In a sense, the use of these two kinds of milk announces the main milk offerings made with the mahāvīra vessel itself. On the other hand, they do not have any necessary connection with the following ceremonies in the Agnicayana rite.

I shall next take up a parallel Ps passage from the main ceremony. The scene is that of the molding of the clay vessels in the prescribed manner.

Clay is kneaded and made into a ball, and is pressed with the thumbs. A third is cut off and it is then divided into three small balls. A professional potter kneads these balls into three parts of the vessel: the bottom, the middle, and the upper part. Two more vessels are made in the same manner. The vessels thus made are one *prādeśa* high, wide at the bottom and contracted in the middle. In order to be used as a receptacle of the milk offering, they are made hollow two-thirds from the top. A girdle of clay surrounds the vessel three or four *aṅgulas* from the top.¹⁷

¹⁵ *athāinam* (scil. *pravargyam*) [*athāinām* (scil. *ukhām*) Us] *saṃdamśena parigrhya sate* "vadhiāya chāgapayasācchṛṇāti" ". . ." iti. *antarataś ca bāhyataś ca svācchṛṇam kṛtvā gopayasābhiviśyandayati.*" (BSS 9.4: 270.4-10; an almost identical passage is found in Us 10.7-8: 7.12-16, except for the mantra portion.)

¹⁶ See van Buitenen, pp. 95f.

¹⁷ Ps:

1. *piṇḍam karoti* "makhasya śiro 'sī" ti.
2. "yajñasya pade stha" ity *aṅguṣṭhābhyām upanigrhṇāti.*
3. *atha tṛtīyam mṛdo 'pacchidya trīn piṇḍān karoti.*
4. *teṣām ekam kartre prayacchati* "gāyatro 'sī" ti. *tenāsya madhyam karoti* "traīṣṭubhena tvā chandasā karomī" ti.
5. *atiśiṣṭāyai mṛdo 'rdham prayacchati* "traīṣṭubho 'sī" ti. *tenāsya madhyam karoti* "traīṣṭubhena tvā chandasā karomī" ti.
6. *sarvām antato mṛdam prayacchati* "jāgato 'sī" ti. *tenāsya bilam karoti* "jāgatena tvā chandasā karomī" ti.
7. *taṃ prādeśamātram pṛthubudhnam madhye lagnam karoti.*
8. *athāsya veṇukāṇḍena dvibhāgam avidhyati, tad asya pinvanam.*
9. *athāsya tryaṅgule vā caturaṅgule vā rāsnām paryasyati* "makhasya rāsnāsi" ti.
10. *athāsya bilam grhṇāti* "aditis te bilam grhṇātu pāṅktena chandasē" ti. (BSS 9.3: 268.6-16)

The process of *ukhā* molding is almost the same, except that its shape is characterized by eight (or nine) corners, which have nipple-shaped protuberances on them.¹⁸

Comparing the prescriptions of Ps and Us, we find that the former is more detailed than the latter. For instance, one-third of the entire amount of clay is divided into three small balls, and the vessel is made with these balls, but no explicit statement is given in Us as to which part of the vessel is molded from which ball. On the other hand, Ps clearly prescribes the actions of the potter: the bottom part (*budhna*) is made from the first ball, the middle (*madhya*) from the second, and the opening (*bila*) from the third.¹⁹ By comparison, it is strange that Us omits the portion concerning the actions of the potter, while those of the *adhvaryu* priests during the preparation procedures are exactly the same in both texts. As the result of this omission, the shape of the *ukhā* vessel in Us is to some extent unintelligible.²⁰

What is the reason behind this omission by the sūtrakāra of Us, an omission that prevents the clear understanding of ritual process, which must be the real purpose of the śrautasūtra texts? In my opinion, it has something to do with the development of ritual thought during the period of the compilation of the śrautasūtras. The above omission on the part of Us seems to have been made with the intention of eliminating, from the surface of the ritual description, the existence of the professional potter who is not entitled to be counted among the officiating priests. In both Ps and Us, where the preparation of clay artifacts is the focus of the procedure, the participation of a skillful potter is absolutely required. That is why both

¹⁸ Us:

1. *piṇḍam karoti* "makhasya śiro 'sī" ti.
2. "yajñasya pade stha" ity *aṅguṣṭhābhyām upanigrhṇāti.*
3. *atha tṛtīyam mṛdo 'pacchidya trīn piṇḍān karoti.*
4. *teṣām ekam ukhākrte prayacchati* "saṃsrṣṭāni vasubhī rudrair . . ." iti. *anumantrayate* "vasavas tvā kṛṇvantu gāyatreṇa chandasā . . ." iti.
5. *atiśiṣṭāyai mṛdo 'rdham prayacchati* "sinivalī śukapardā . . ." iti. *anumantrayate* "rudrās tvā kṛṇvantu traīṣṭubhena chandasā . . ." iti.
6. *sarvām antato mṛdam prayacchati* "ukhāni karotu śaktyā . . ." iti. *anumantrayate* "ādityās tvā kṛṇvantu jāgatena chandasā . . . , vaiśvānarāḥ kṛṇvantv ānuṣṭubhena chandasā . . ." iti . . .
7. *taṃ prādeśamātrīm ūrdhvām aparimitām tiraścīm karoti.*
8. —
9. *athāsya tryaṅgule vā caturaṅgule vā rāsnām paryasyaty* "adityai rāsnāsi" ti. *athāsya anudīṣam aṣṭāv aśrīr unnayati, rāsnāsandhiṣu cāśrīsandhiṣu cāṣṭau stanān karoti, 'navāśrīm abhicarataḥ kuryād* (TS 5.1.6.4) *iti brāhmaṇam. astanāni navamīm karoti.*
10. *athāsya bilam grhṇāti* "aditis te bilam grhṇātu pāṅktena chandasā . . ." iti. (BSS 10.5: 5.5-20)

¹⁹ Compare prescription 4-6 given in nn. 15, 16.

²⁰ Further compare prescriptions 7 of Ps and Us given above. The latter is rather more abstract and obscure than the former.

Ps and Us list him in the paraphernalia at the beginning of the descriptions. In the later śrautasūtras of the Yajurveda, however, the potter tends to be eliminated, not simply from the surface of the prescriptive passages but from the rite itself. In the sūtras that were composed after Baudhāyana, the the adhvaryu priest is prescribed to prepare the pravargya artifacts all by himself in Ps, while in Us the molder of the ukhā is the adhvaryu or the ritual wife or the sacrificer.²¹ Thus, in Us the preparation of the artifacts is left to the charge of the formal participants in the rite. From a practical point of view, however, it would require some sort of special technique to mold and bake these unique clay implements, which will be repeatedly used and actually play a very important role in the following ritual processes. It would not be possible for a nonspecialist to prepare them without training in the skill of pottery. This is implied by the sūtras of Baudhāyana: "A skillful maker (kuśala-kartṛ)" in Ps and "a skillful maker of ukhā (kuśala-ukhākrṛ)" in Us. The elimination of the potter in these later sūtras²² may be due to a tendency toward the "purification" of the ritual world in the development of the śrauta ritual, that is, a tendency to confine access to the ritual activities to the officiating priests and the sacrificer (and his wife), who are the formal major participants in the śrauta rite.²³ This is one of the general trends found in the śrauta rituals when we compare the prescriptions of the early sūtras with those of the later ones.

Now in our case there occurs a paradox: the potter is required to be there at the site, since the preparation of the clay artifacts is the focus of the procedures of Ps and Us; on the other hand, considered from the point of view of the ritual world that is the exclusive concern of the priests and the sacrificer, the potter essentially remains an outsider who is, if possible, to be kept in the background. In the course of ritual development after BŚS, the śrautasūtras of the Yajurveda seem to have solved this problem by making the actual process of preparation of the clay vessel into a mere

²¹ For Ps texts, see van Buitenen, Index I-8 (p. 151, correction: KŚS 26.1.15-18). Us: adhvaryu priest or mahiṣi (ĀpŚS 16.4.5, HirŚS 11.1.48, VaikhŚS 18.1), patnī (MānŚS 6.1.2.6, VārŚS 2.1.1.36), the sacrificer (KŚS 16.3.23).

²² Before the clay artifact is baked, a pit is dug in the ground to be used as the pottery kiln. In the Baudhāyana Sūtra, the adhvaryu entrusts the act of digging to someone, *athōttareṇa śālām urubilam ivāvaṭaṃ khanayati* . . . (9.3: 269.4-5 = 10.6: 6.9-10), maybe a potter or his assistant. On the other hand, all of the later sūtras of YV prescribe that the adhvaryu himself dig the pit (cf. ĀpŚS 15.3.20, 16.5.8, MānŚS 4.1.22, 6.1.2.15 et al.).

²³ Further, another important difference is noticed between the above quoted passages of Ps and Us. In Ps the adhvaryu recites all of the mantras by himself, while some mantras are recited by the sacrificer in Us (as is indicated by the word *anumantrayate*). And a dialogue between the procession party and the vaiśya man is given in Us of the Baudhāyana sūtra. On this point, all of the later sūtras eliminate the actual presence of the vaiśya man and, instead of the dialogue, the adhvaryu alone recites his mantra; the dialogue is superseded by a monologue! This is another example of the elimination of people other than the formal participants in the śrauta rite.

formality. In other words, the clay vessel is already there at the start of the rite, having been made by a potter and brought beforehand. The "molder" of the vessel, whether it is the adhvaryu priest or the sacrificer's wife, only pretends to make it during the actual performance of the rite.²⁴ What is important for the ritual party, then, is the exact performance of the recitation of mantras to accompany the occasion. The elimination of prescriptions concerning the potter's action in Us can thus be seen as part of the tendency to eliminate the potter himself in the later śrautasūtras, and it also can be regarded as evidence that Us borrowed its prescriptions from Ps and adapted them in its own way.

Throughout the mantras of Ps, the clay and the clay artifact are addressed consistently with the same appellation, "*makhas-*" or "*makhasya śiras-*." When the clay is dug from the pit and collected upon the skin of the black antelope, the description runs as follows: [The adhvaryu] digs the ground with a shovel with "May I succeed today! You are the head of Makha." [Then] he carries [the dug-up clay to the site of the antelope skin] with "[I take] you for the head of Makha," and pours [the clay with the shovel upon the skin] with "[I pour] you for the head of Makha."²⁵ In the same way, the mantra used at the molding scene is, "You are the head of Makha"; the one at attaching a girdle to the vessel is, "You are the girdle of Makha"; the one at the completion of molding is, "You are Makha."

In Us, on the other hand, the ukhā is addressed with various names. It is called "agni puriṣya" (Agni hidden in the earth) at the stage before molding, "ukhā" just before molding, and "Makha's head" and "Aditi" during the molding process.²⁶ It is difficult to see a consistent implication throughout all of these terms. The use of "Makha's head, which is supposed to serve the function of the birthplace of Agni in the ritual context of the Agnicayana, is especially strange. The expression "Makha's head" in Ps can be explained by the circumstance of the incorporation of the Pravargya rite into the Agniṣṭoma,²⁷ but it has no such straightforward explanation in the context of Us itself.

I may add one more discrepancy between Ps and Us from the mantra

²⁴ This is what I observed at the Nambudiris' Agnicayana performance, held in April 1975 at Pañjal, Kerala State. see Volume I, pages 297-298, and plate 42.

²⁵ *abhriyā praharaty 'rdhyāsam adya makhasya śira' iti. 'makhāya tvē' ti harati. 'makhasya tvā śirṣṇa' ity uttarataḥ kṛṣṇājine nivapati* (BŚS IX. 2: 266. 14-16). I have corrected Caland's text punctuation, putting a full stop after 'nivapati(y)' and starting the next passage with 'udūhya'. In the same way, the following passages must be corrected: p. 266, 1.20; p. 267, 1.5; 1.9 and 1.13.

²⁶ 'Agni puriṣya-' is the favored phrase in Us mantras. On the word 'puriṣya', cf. L. Renou, 'Védique puriṣa,' *IJJ* 4 (1960), pp. 104-110.

²⁷ I agree with van Buitenen on the interpretation of this phrase that the Pravargya rite symbolically 'completes' the incomplete Agniṣṭoma rite (see van Buitenen, pp. 19f.). On the appellation of 'makha' and 'makhasya śiras', see van Buitenen, pp. 16f.

portion of both rites. Some meter names are found in the mantras applied to the ritual procedure of molding the clay artifacts. In Ps, the first (bottom) part of the vessel is molded with a mantra "*gāyatreṇa tvā chandasā karomi*"; the second (middle) part with "*traiṣṭubhena tvā chandasā karomi*"; the third (top) part with "*jāgatena tvā chandasā karomi*" (TA IV.2.6). These three meters, i.e., gāyatrī, triṣṭubh and jagatī, are regarded as the three major ones found in the ritual literature in general. In brāhmaṇa portions, these three usually make one set that symbolizes triads of things or worlds.²⁸ In the case of the Pravargya rite, these three correspond to the three worlds that constitute the universe: the earth, the atmosphere, and the heaven. Thus, an analogy is drawn between the mahāvīra vessel, consisting of three parts, and the whole universe. In addition to these three meter names, the text of Us supplies one more meter name in its description corresponding to that in Ps, anuṣṭubh: Us adds a mantra with the words *ānuṣṭubhena chandasā* to the mantra recited at the molding of the third part of the vessel. But, interestingly enough, this additional mantra does not accompany an independent action, while the other three preceding mantras of meter names do. The following are the mantras that accompany the ukhā molding procedure: for the first part, "*vasavas tvā kṛṇvantu gāyatreṇa chandasāṅgirasvat, prthivy asi (dhruvāsi dhārayā mayi prajāṃ rāyas poṣaṃ gaupatyam suvīryam sajātān yajamānāya)*"; for the second, "*rudrās tvā kṛṇvantu traiṣṭubhena chandasāṅgirasvad antarikṣam asi . . .*"; for the third, "*ādityās tvā kṛṇvantu jāgatena chandasāṅgirasvad dyaur asi . . . , viśve tvā devā vaiśvānarāḥ kṛṇvantu ānuṣṭubhena chandasāṅgirasvad diśo 'si . . .*" (TS IV.1.5 n; the parenthesized portion is common to each mantra). So the order of meter names in these mantras is gāyatrī-triṣṭubh-jagatī-anuṣṭubh. The fourth mantra, anuṣṭubh, is recited directly after the third one and closes the series. It is recorded in all the extant YV mantra texts of the Agnicayana, and we may safely say that it belongs to the original tradition of this rite. But why does Us have this extra mantra with the word "anuṣṭubh"?

The reason will be found when we take notice of the symbolic meaning of the anuṣṭubh meter as it has developed in the speculative thought of ritual literature, especially in that of brāhmaṇa passages.²⁹ As mentioned before, when brāhmaṇa explanatory passages treat a set of three notions or entities, they usually symbolize them by means of the meter names, i.e. gāyatrī, triṣṭubh and jagatī. And, in case the quadruple is discussed—for instance, the quarters of the sky or four offerings—the whole of the quadruple or the fourth one is symbolized by the meter name "anuṣṭubh." In brāhmaṇa speculation, these four—that is, the first three and the anuṣṭubh—are re-

²⁸ For the meters and their effects in the ritual literatures, cf. A. Weber, *Indische Studien* 8, 1863, pp. 8f.

²⁹ A. Weber, *op. cit.*, p. 37f., H. W. Bodewitz, *Jaiminiya Brāhmaṇa* I. 1–65, Leiden 1973, p. 87, n. 26.

garded as the chief forms of meter. When further elements are to be added, the system of chief meters is extended to paṅkti as the fifth and atichandas as the sixth, respectively. This classification of meters is based upon numerical symbolism, which is particularly favored by the speculative thought developed in the brāhmaṇa passages.³⁰ In this classification, those that follow the fourth meter symbolize the totality of the corresponding set of entities when they close the series. We must consider the above series of meter names of Us in accordance with this line of thought. The anuṣṭubh in the above Us mantra bears the function of symbolizing the totality of the preceding three, which are homologized with earth, atmosphere, and heaven—i.e., the worlds constituting the universe. In this mantra, the anuṣṭubh itself has the quarters of sky as its corresponding entity, so it integrates the three worlds and establishes the totality of the universe. The name of the deities which appear along with this metre name is the All-gods (*viśve devās*), which thus precisely corroborates the idea.³¹ The Us's addition of a mantra having the anuṣṭubh meter is made with this background of brāhmaṇa speculation on meter symbolism. In general, the mantras of Ps are simpler and less metrical than those of Us. And the speculative aspect in Us may be detected in the fact that the above anuṣṭubh mantra does not correspond to an independent ritual act, but remains an additional one that complements the series of preceding mantras in terms of numeral symbolism.

In this study, I have selected one case from each of the three different aspects of the rite—that is, the site of ritual performance, the ritual action and the formulae accompanying the action—and have tried to compare briefly the corresponding portions of Ps and Us given in BŚS IX and X, respectively. Between these two strikingly parallel ritual descriptions, Ps seems to be more original than Us, based upon the above evidence. My conclusion is that the Us description of BŚS was compiled after the model of Ps in the same text.

³⁰ J. C. Heesterman, *The Ancient Indian Royal Consecration*, The Hague 1957, pp. 34f. For 'paṅkti', see A. Weber, *op. cit.*, pp. 47f.; J. Gonda, *The Savayajñas*, Amsterdam 1965, pp. 130f. For 'atichandas', see Weber, *op. cit.*, pp. 64f.

³¹ H. W. Bodewitz, *loc. cit.*

AGNICAYANA IN THE MĪMĀṢĀ

Paṇḍitarāja K. Bālasubrahmaṇya Śāstri
Edited by James A. Santucci

*mīmāṃsā-sūtra-kāraṇaṁ taṁ
jaiminiṁ śabaraṁ munim/
bhāṣya-kāraṇaṁ bhaṭṭa-pādān
gurūn naumi punaḥ punaḥ||*

[Repeatedly do I praise Jaimini, the author of the Mīmāṃsā-sūtras; the sage Śabara, the author of the Commentary (of the Sūtras); and all the eminent Bhaṭṭas (and) teachers.]

*saṁgrahaṇa pravaktā-'tra
cayane jaiminer matam/
vicāryā- 'gata-siddhāntam
bālabodhāya bālakaḥ||*

[I will now expound in this paper the view(s) of Jaimini regarding the Cayana, which are arrived at following a discussion (of all prima facie or *pūrva-pakṣa* opinions). This paper of Bāla's (the author) is also instructive for beginners (*bāla*).]

EDITOR'S NOTE:

This article by Paṇḍitarāja K. Bālasubrahmaṇya Śāstri on the Agnicayana from the Mīmāṃsā perspective is important because many commentaries on the Brāhmaṇa and Sūtra texts are based upon the Mīmāṃsā mode of analysis. As a matter of fact, many commentators were trained Mīmāṃsakas. An illustration occurs during the main course of the ritual when the Praśārtham is recited at the yajamāna's consecration (Volume I, pages 328–333). In general, the Mīmāṃsā may be regarded as a later development of the śrauta tradition.

Though the article was written by the author in English, its style and mode of exposition are Sanskritiḥ, and it contains many technical terms. I have therefore supplied translations and additional pertinent information. Everything contributed by me has been placed between square brackets. Although a great deal of information would be required to understand all of the concepts employed within the paper, space does not allow such

indulgence. There are a few terms that require additional comment: *vidhi* 'injunction', *utpatti-vidhi* 'originative injunction', *vinivoga-vidhi* 'applicatory injunction', *nitya-karma* 'obligatory rite', *kāmya-karma* 'optional or wish-fulfilling rite', and *aṅga* 'subordinate part'.

In Section I, Mr. Śāstri raises the question of the nature of the Agnicayana rite. This is determined by originative and applicatory statements or injunctions, both of which in turn are described and defined in Section VIII. The importance of the injunction (*vidhi*) in Mīmāṃsā centers around the main topic of investigation of this system, namely, dharma. Dharma is defined in Mīmāṃsā-sūtra 1.1.2 as "the object that is distinguished by a command" (*codanā-lakṣaṇo 'rtho dharmah*). Āpadeva (Edgerton, 1929: paragraph 3) adds that it refers to an object that is enjoined by the Veda for the sake of a profitable goal (*vedena prayojanam uddiśya vidhiyamāno 'rtho dharmah*). Thus, the *vidhi* or *codanā* 'binding force' (*vidhi* = *codanā* according to Prabhākara; Jhā, 1911: 108) is that which moves men to act or not act with a particular goal in mind. The *vidhi* or *codanā* may be considered the essence of dharma. The source of all injunctions is found within the Veda, that is, the Brāhmaṇa portion of the Veda defined by the Mīmāṃsakas as injunctive or commandatory texts (Sandal, Sacred Books of the Hindus, vol. 28: XVII). These injunctions are concerned with the details of sacrificial procedure and define, to a large extent, the type of sacrificial action that is to be performed. There are two kinds of sacrifices: those that are *nitya* and those that are *kāmya*. A sacrifice itself possesses two parts: the principal (*pradhāna*) and the subordinate (*guṇa*) (compare Mīmāṃsā-sūtra 6.3.2). In the *nitya-karma* the principal part must be performed, for it in itself is sufficient to incur the intended object (6.3.1–4). The optional rite, on the other hand, must be performed in its entirety because the principal part, having no connection with the "fruit" of the rite, cannot achieve the desired result (6.3.8–9). However, since it is performed with a specific purpose in mind, there is no obligation in its performance. In other words, no transgression (*doṣa*) is incurred if it is not performed, which is quite the contrary of the obligatory rite (6.3.3 and 10). Turning now to the injunctions that Mr. Śāstri employed in order to determine the nature of the Agnicayana, the first—the originative injunction—merely indicates the general nature of the rite; that is, it creates a desire in the sacrificer to perform the rite for the intended fruit (Edgerton, 1929: paragraphs 47, 63–65). The second—the applicatory injunction—lays down the actions and materials by which the sacrifice is carried out. Thus, it indicates the connection between the subsidiaries (*aṅga*) and principal (*pradhāna*) (*Ibid.*, p. 66).

The term *aṅga* refers to those subordinate parts that contribute to the completion of the principal action (Sandal, SBH, vol. 28: XXI). It consists of two grand divisions: *siddha-rūpa* "consisting of fixed elements" and *kriyā-rūpa* "consisting of actions" (Edgerton, p. 110). The first includes

such elements as the caste (*jāti*) of the participating individual, the material (*dravya*) employed, and the number or quantity (*saṃkhyā*) of items to be employed. The second—*kriyā-rūpa*—is subdivided into subsidiary (*guṇa*) and principal actions (*pradhāna-karma*). The latter, however, does not refer to the principal sacrificial action mentioned above since both the *guṇa* and *pradhāna* actions are still *aṅgas*. The *guṇa* actions contribute indirectly to the purpose of the main rite, while the *pradhāna* actions contribute to it directly (for a full explanation see Edgerton, pp. 182–195).

Here follows a bibliography of the more important works on *Mīmāṃsā*:

- Edgerton, Franklin, ed. and trans. *Mīmāṃsā Nyāya Prakāśa or Āpadevī: A Treatise on the Mīmāṃsā System*. New Haven, Conn., 1929.
- Jhā, Gaṅgānātha. *The Prabhākara School of Pūrva Mīmāṃsā*. Allahabad, 1911.
- . *Pūrva-Mīmāṃsā in its Sources: with a Critical Bibliography by Dr. Umesha Mishra*. Benaras, 1942.
- . *The Pūrva-Mīmāṃsā Sūtras of Jaimini: Chapters I-III*. Sacred Books of the Hindus, Vol. 10. Allahabad, 1916. The SBH were reprinted by the AMS Press, N.Y., in 1974.
- Kane, P. V. *A Brief Sketch of the Pūrva-Mīmāṃsā System*. Poona, 1924.
- Keith, Arthur Berriedale. *The Karma-Mīmāṃsā*. London, 1921.
- Mādhavānanda, Swāmi, trans. *Mīmāṃsā-Paribhāṣā of Kṛṣṇa Yajvan*. Belur Math, Dt. Howrah, 1948.
- Sandal, Pandit Mohan Yal, ed. and trans. *The Mīmāṃsā Sūtras of Jaimini*, Chapters I-XII. SBH, Vol. 27. Allahabad, 1923–25.
- . *Introduction to the Mīmāṃsā Sūtras of Jaimini*. SBH, Vol. 28. Allahabad, 1925.
- Shastri, Pashupatinath. *Introduction to the Pūrva-Mīmāṃsā*. Calcutta, 1923.
- Thibaut, G., ed. and trans. *The Arthasaṃgraha: An Elementary Treatise on Mīmāṃsā by Laugākshi Bhāskara*. Benares Sanskrit Series, No. 4. Benares, 1882.

I

THE DECISION AS TO whether the Agnicayana is a *nitya* [obligatory] or *kāmya* [optional] rite is determined by the *utpatti-vākya* [originative statement] and *vinīyoga-vākya* [applicatory statement] employed for the rite. The former appears in Taittirīya Saṃhitā (TS) 5.6.3.4: *ya evaṃ vidvān agniṃ cinute* [“who, knowing thus, builds the fire(-altar)”]; the latter statement is the following: *athā-to ’gniṃ agniṣṭomenā-nuyajanti* [“They subsequently offer the oblations to the fire with the Agniṣṭoma”]. There is thus one ritual act (*karman*) called *cayana* (“piling,” i.e., of the bricks) that is subsidiary (*aṅga*) to the Jyotiṣṭoma. Furthermore, the Śruti and Kalpa-sūtras assert that the Cayana is not necessary (*nityāṅga*), but rather optional, as is indicated in the following passages: *yady agniṃ ceṣyamānāḥ bhavanti* [“If they are going to build the fire (altar)”]: Śatapatha Brāhmaṇa 4.6.8.3] and *agniḥ somāṅgaṃ ceṣyatām* [“of that which is going to be built, the fire (altar) is subsidiary to the Soma rite”].

If the Cayana is absent (in the Soma rite), the uttaravedi [high altar] serves as the location of the āhavanīya [sacrificial or offering] fire. If, however, the Cayana is piled at the site of the uttaravedi, then the sacred āhavanīya fire should be installed on the Agnicayana altar. Therefore, the Cayana is an optional aspect (*vikalpa*) of the obligatory uttaravedi.

Turning now to the sense of the term *agni*, we find in śrauta literature that it means “fire” by *abhidhā* [the literal sense of the word], āhavanīya by *nirūḍha-lakṣaṇā* [conventional or secondary use of the word], Cayana by *gauṇī-vṛtti* [indirect use of word], and the Soma sacrifice. With reference to the latter sense, the Agnicayana is viewed as *saṃskāra karma* [preparatory action] to the āhavanīya fire in the same manner as are the Prokṣana [sprinkling (of grain)] and Avahanana [pounding the grain in the mortar for the purpose of decortication]. It is not an *artha karma* [primary rite] as are, for instance, the iṣṭi [a *haviryajña*, i.e., a ritual involving a vegetable oblation such as rice or barley] and prayāja [“fore-sacrifice”: the name of the fire oblations preliminary to the iṣṭi]. This is due to the presence of the accusative case in the *utpatti* statement above [. . . *agniṃ cinute*—“He builds the fire (altar)”] and not the instrumental (**agninā cinute*—“He builds with the fire (altar)”], which would follow the model injunction *jyotiṣṭomena yajeta* [“He should offer oblation with the Jyotiṣṭoma”]. Some *saṃskāras* are directed to the āhavanīya; for instance, a platform is erected for the cayana wherein the āhavanīya is kept (*cayana-niṣpādita-sthaṇḍila-sthāpanenā-’havanīyā ’gniṃ saṃskuryāt*) [“One should construct the āhavanīya-fire by establishing an altar prepared for the cayana”]. With regard to the term *agni* in this passage, we find in the Śruti that such expressions as *agneḥ stotram*, *agneḥ śastram*, *cityasyā ’gneḥ ṣaḍupasadaḥ* [“The praise of Agni, the recitation of Agni, the six upasads of the fire to be piled”] reveal Agni to mean the ritual [*yāga*] possessing the Cayana. Therefore, four senses are given to Agni as cited above, and these are discussed by Jaimini in 2.3. 21–23. Although it is an optional *aṅga* [subsidiary] to the Soma sacrifice, it is also said to be *kāmya* as given in the following examples: *paśu-kāmaś cinvīta* [“One desirous of cattle should build for himself”], *āmayāvi cinvīta* [“One who is sick should build for himself”], *vṛṣṭi-kāmaś cinvīta* [“One desirous of rain should build for himself”], and *brahmavarcasa-kāmaś cinvīta* [“One desirous of preeminence in sacred knowledge should build for himself . . . ”]. These are all *śruti-kāmya* [optional rites based upon direct statements], i.e., *adhikāra-vidhayaḥ* [prescriptions of qualification].

In order to determine the dependence of a ritual action upon another there exist six *pramāṇas* [modes of evidence]: *śruti* [direct statement], *liṅga* [word-meaning, or implication from another word], *vākya* [syntactic connection], *prakaraṇa* [context], *sthāna* [position], and *saṃākhyā* [name, etymological meaning]. According to one type of *sthāna*—the *anuṣṭhāna-sādeśya* [common location in the performance]—the Cayana is considered dependent upon the Soma sacrifice. In order to avoid the *kāmyatā* [option] and to

ascertain its *nityatā* [obligatoriness], a *vidvadvākya* [learned statement] is useful. If this is practiced, it is called *pratiprasava-vidhi* [injunction of counterexception], which is an optional *aṅga*. Furthermore, the Cayana may occur in modified (*vikṛti*) sacrifices optionally through *atideśapramāṇa* [the mode-of-evidence of transfer (from *prakṛti* to *vikṛti*)] as well as in the model (*prakṛti*) Jyotiṣṭoma. In some modified rites [*vikṛti-yāgas*] such as the Ukthya, Atirātra, and Dvirātra, however, the Cayana is obligatory, according to the Mīmāṃsā-sūtras 10.8.23–28.

Turning now to the discussion contained within Mīmāṃsā-sūtras 2.2.24–25, there are eleven statements appearing in TS 5.4.11.1–3 that are called *guṇa-kāma-vidhis* [i.e., injunctions that denote the material or accessory with which the sacrifice is to be performed]. They follow the usual Mīmāṃsā model *guṇa-vidhi*: *dadhne-ndriya-kāmasya juhuyāt* [“He should offer sour milk for one desirous of manly power”: Taittirīya Brāhmaṇa 2.1.5.6] and are cited as follows:

- (1) *chandaś-citaṃ cinvīta paśukāmaḥ* . . . [“He who is desirous of cattle should build an altar with the meters. . . .”]
- (2) *śyena-citaṃ cinvīta suvarga-kāmaḥ* . . . [“He who is desirous of heaven should build an altar (in the form) of a bird of prey. . . .”]
- (3) *kaṅka-citaṃ cinvīta, yaḥ kāmayeta śirṣaṇvān amuṣmiḥ loka syām iti* . . . [“Who should desire for himself ‘May I be possessed of a head in yonder world’ should build an altar (in the form) of a heron”]
- (4) *alaja-citaṃ cinvīta catuḥśitam pratiṣṭha-kāmaḥ* . . . [“He who desires support should build an altar (in the form) of an Alaja bird having four furrows”]
- (5) *praūga-citaṃ cinvīta bhrātrvyavān* . . . [“One who has enemies should build a Praūga altar”]
- (6) *ubhayataḥ praūgam cinvīta, yaḥ kāmayeta prajātān bhrātrvyānn udeya, pratijaniṣyamānān iti* . . . [“Who should desire (the following): ‘May I repel (my) enemies who have already been born and who will be born again’ should build the Praūga on both sides”]
- (7) *rathacakra-citaṃ cinvīta bhrātrvyavān* . . . [“He who has enemies should build an altar (in the form) of a chariot wheel”]
- (8) *droṇa-citaṃ cinvīta-’ma-kāmaḥ* . . . [“He who desires food should build an altar (in the form) of a Droṇa-vessel”]
- (9) *samūhyaṃ cinvīta paśu-kāmaḥ* . . . [“He who desires cattle should build (an altar) that is collected and prepared (by the adhvaryu)”]
- (10) *paricāyyaṃ cinvīta grāma-kāmaḥ* . . . [“He who desires a village should build (an altar in) a circle”]
- (11) *śmaśāna-citaṃ cinvīta, yaḥ kāmayeta pitṛloka ṛdhmuyām iti* . . .

[“Who should desire ‘May I succeed in the world of the Fathers’ should build an altar (in the form) of a cemetery”]

These statements indicate that the *phala* [fruit of the ritual action] is produced by the *guṇas* [accessories or material used in the rite] and not by the karma [ritual action], i.e., *phalāya guṇa-vākyaṃ* [a statement containing the accessory (employed in the rite) conducing to the fruit]. Thus, the karma is technically an *āśraya* [dependent-support] and not a *karaṇa* [means, i.e., to produce the phala].

These statements contained in the above passages with additional discussions in Sāyaṇa, Bhaṭṭabhāskara’s *Bhāṣya*, and in some of the śrauta sūtras allude to the existence of various types of Agnicayana; that is, the Agnicayana possesses fire altars of varying shapes and sizes. These altars are traditionally divided into two parts: Kṣudra-cayana [small—or minor—piling] and Mahā-cayana [major piling]. The Kṣudra-cayana (as discussed in the Taittirīya Āraṇyaka I, the Taittirīya Brāhmaṇa 3.10–12, the Āpastamba Śrautasūtra 19.11–15, and Baudhāyana Śrautasūtra (19.1–10) consists of five subdivisions:

1. Sāvitra-cayana [the building of the fire altar in the form of Savitr or the sun]
2. Nāciketa-cayana [the building of the fire altar according to the example of the sage Naciketas]
3. Cāturhotra-cayana [the building of the fire altar with the formulae symbolizing the four hotṛs]
4. Vaiśvasṛja-cayana [the building of the fire altar as it was built originally by the creators of the universe]
5. Aruṇaketuka-cayana [the building of the fire altar as it was built by the sage Aruṇaketu]

The Mahā-cayanas (as discussed in TS 4 and 5) consist of three types: the building of an altar consisting of five, ten, or fifteen layers of bricks. The Kṣudra-cayanas differ from the above in employing pots with pure water rather than bricks.

It may be added in closing this section that Pāṇini refers to some of the terms referred to above, such as *śyena-cita*, *agni-cit* [one who has built the fire altar], *samūhya*, *paricāyya*, etc., in Sūtra 3.2.91: *agnau ceḥ*. [“*KviP* occurs after \sqrt{ci} ‘collect’ in the past tense when *agni*, ending in the accusative, occurs in composition with it”]; 3.2.92; *karmaṇy agny-ākhyāyām* [“In the passive sense if the compound designates a fire”]; and 3.1.131: *agnau paricāyyo-pacāyya-samūhya* [“*Paricāyya*, *upacāyya*, and *samūhya* are irregularly formed when they are names of fire”].

II

Now that the construction of the fire altar has been discussed, it would be appropriate to mention the names and number of bricks employed in its construction. One set of bricks are called *apasyāḥ* [water bricks], twenty of which are deposited for the first layer with the accompanying mantras found in TS 4.3.1 beginning with *apām tve 'man [sādayāmi]* "I place you in the course of the waters". Though there is an absence of the word *ap* 'water' in a few of these mantras, all are nonetheless named *apasyā* according to the Bhūma-nyāya ["the multitude rule," i.e., because many of the mantras contain the word *ap*, those which do not also bear the appellation *apasyā*]. This rule occurs in the Mīmāṃsā-sūtra 1.4.27 (with reference, however, to the Sṛṣṭi-mantras and the *śruti-vākya* [a statement found in a revealed text] *sṛṣṭir upadadhāti* ["He deposits the creating (bricks)": TS 5.3.4.7].

The bricks employed in the construction of the altar are considered to be the *sādhana dravya* [material used as the means] for the Cayana. This is based upon the *guṇa-vākya* [= *guṇa-vidhi*: "injunction denoting the material with which the sacrifice is to be performed"]: *iṣṭakābhir agniṃ cinute* ["He builds the fire altar with the bricks"]. The piling itself is performed by the action (*samskāra*) called *upadhāna*, i.e., the depositing on the part of the *adhvaryu* of each single brick in its appropriate place by the appropriate mantra.

This action is enjoined by several *vidhis* such as "*sṛṣṭir upadadhāti*," "*prāṇabhṛta upadadhāti*" ["He deposits the creating;," "breath-supporting (bricks)"], etc. Although this action, i.e., the *upadhāna*, is perceptible through the *arthāpatti-pramāṇa* [mode of evidence through implication] arising from the injunctions centering on the piling of the altar (*cayana-vidhi*), it is nonetheless explicitly stated in the Veda. Furthermore, it enjoins that only one priest—the *adhvaryu*—should deposit each brick singly and not in groups. It is added that the accompanying mantra, which contains within it the root *srj*, also is to be recited during this action. Some bricks, however, are mentioned without the appropriate *avāntara-citi-prakaraṇa* [included context with regard to the layer of the altar]. They may, therefore, be deposited on all five layers by the force of *mahā-prakaraṇa* [major context] or at least on the fifth layer by the *Āgantuka-nyāya* [rule of interpolation]. In order to avoid these alternative possibilities, however, and to establish that the connection must be with that of the central layer, a specific injunction reads "*yām vai kām ca na brāhmaṇavatīm iṣṭakām abhijānīyāt, tām madhyamāyām citāv upadadhyāt*" ["Whatever brāhmaṇavatī brick he might not recognize, let him deposit it in the middle layer"]. This is the general rule for the bricks that possess no included context. Therefore, there is no excessive generalization (*ativyāpti*) with regard to the *lokaṃprṇā* or "space-filling" bricks, which are placed in all five layers to fill the space.

Returning to the *sṛṣṭi* bricks, seventeen are deposited [in the fourth

layer] with the accompanying mantras, fourteen of which contain the root *srj* [TS 4.3.10]. The other three are contained within the same grouping in accordance with the Bhūma-nyāya, the same rule that connects all the mantras in TS 4.3.1 with the twenty *apasyā* bricks, as well as accompanying mantras to the depositing of the fifty *prāṇabhṛt* bricks [TS 5.2.10] not containing the term *prāṇa* [breath: TS 4.3.2]. As such, this is called the *Prāṇa-bhṛn-nyāya*, *Chatri-nyāya*, or simply the *līṅga-samavāya* [collection of emblems], which in fact comprises the Mīmāṃsā-sūtra 1.4.28.

The procedure of constructing the altar up to and including the first layer involves ploughing the ground with six or twelve bullocks, the depositing of sand, gold, and naturally perforated stones (*svayamātrṇṇā*) as well as the *apasyā* bricks mentioned above. One grammatical peculiarity that surrounds the mantra that accompanies the depositing of the bricks is given in the *Aṣṭādhyāyī* 4.4.125: *tadvān āsām upadhāno mantra iti iṣṭakāsu luk ca matoḥ* ["Following a nominal stem ending in the affix *matUP* and signifying an *upadhāna* mantra employed to refer to the bricks, (the affix *yaT*: 4.4.75) is substituted and there is elision of *matUP*"].

The second layer of the altar involves the depositing of bricks called *āsvinī*, *ṛtavyā*, *prāṇabhṛt*, *vṛṣṭisanī*, *vayasyā*, and the *mūrdhanvatī* (TS 5.3.1). In the middle or third layer the *disyā*, *prāṇabhṛt*, *brhati*, and *vālakhilyā* bricks are deposited following the deposit of the *svayamātrṇṇā* stone. Those bricks deposited in the fourth layer are the *akṣṇayāstomīyā*, *sṛṣṭi*, and *vyuṣṭi* series; and finally in the fifth and top layer the *asapatnā*, *virāj*, *stoma-bhāgā*, *nākasad*, *codā*, *vikarṇī*, *maṇḍalā*, *viśvajyotis*, *vṛṣṭisani*, *saṃyānī*, *āditya*, *ghṛta*, *yaśodā*, *bhūyaskṛt*, *agnirūpā*, *draviṇodā*, *āyusyā*, etc., bricks are deposited. *Vide* TS 5.3.2–11. In TS 5.4.1.3 only one scientific principle is operative at the time of the Nakṣatre 'ṣṭakā-vidhi [injunction with reference to the constellation bricks], thus invalidating the *Bhūbhramāṇa-vāda*.

If one does not obtain "support" (*pratiṣṭhā*), then a sixth optional (*nai-mittika*) layer should be deposited [TS 5.4.2.2]. The *adhipatnī* [female ruler] bricks as well as other bricks such as the *ṛtavyā* [seasonal], have the same function. This Cayana is thus called by the special name of Rudra. The attendant "preparatory actions" (*samskāra*) within the Cayana should be performed as a child would suckle the breast (*stanyapāna*). These actions are the *Śatarudrīya-homa* [TS 4.5; 5.4.3], which are accompanied with the offerings of goat's milk, and the *Vasordhārā* together with the *Camaka* mantra, employing ghee, etc. [TS 4.7.1–11; 5.4.8]. The *Vasordhārā* should be performed *santata* ["continuously," referring to a continuous flow of ghee], i.e., *aviccheda* ["uninterruptedly"]. Furthermore, it is both *nitya* and *kāmya* according to Śābara and the *Taittirīya Saṃhitā*. These and other aspects are discussed by Jaimini in 12.3.21–22.

III

Prior to the actual performance of the Cayana, it is clearly stated in TS 5.1.9–10 that the Ukhyadhāraṇa [bearing the ukhya, i.e., the fire contained within the ukhā pot, which is borne around the neck of the sacrificer] is introduced one year prior to the performance of the Cayana. Thus, the following passage appearing in TS 5.5.1.6 states:

*yo vai saṃvatsaram ukhyam abhṛtvā-'gniṇi cinute, yathā
sāmi garbho 'vapadyate; tādr̥g eva tad ārtim ārchet;
vaiśvānaram dvādaśa-kapālaṇi purastān nirvapet.*

["Who piles the fire (altar) without bearing the ukhya for a year undergoes a miscarriage as surely as a premature fetus. As such, he will incur disaster. If he is unable to bear the ukhya for a year prior (to the year-end) he should offer twelve cakes on potsherds to Vaiśvānara."]

The offering of these cakes to Vaiśvānara is a *naimittika* [occasional] action in the same manner as the Bhedana Homa. This is so stated in the Mīmāṃsā-sūtra 4.4.12–13.

It has already been stated that the sixth layer (*citi*) is optional, and is performed if support (*pratiṣṭhā*) is not gained through the five-layered Cayana (*pañca-citika-cayana*). It may be subsidiary (*aṅga*) to the Cayana if there is a *prayoga-bheda* [a break in performance]; or, in order to acquire the fruit of *pratiṣṭhā*, it may be an independent rite (*svatantra-karma*). This sixth rite is discussed in the Mīmāṃsā-sūtra 4.4.14–18.

IV

We turn now to the place of the *citriṇi* and *mantriṇi* [vajriṇi] bricks which are mentioned in *anārabhyādhīti* [disconnected statements]. A question in Mīmāṃsā-sūtra 5.3.17–19 arises with regard to what layer of the altar they are to be deposited in. Because the *vinīyoga* statements *citriṇiṃ upadadhāti* ["He deposits the citriṇi (bricks)"] and *mantriṇiṃ upadadhāti* ["He deposits the mantriṇi (bricks)"] reveal their subordination (*aṅgatvam*), they are characterized as brāhmaṇavatī bricks on the authority of Mīmāṃsā-sūtra 5.3.19. This sūtra further states that they are to be deposited in the third layer in accordance with the special *vacana* [authoritative statement] *yāṃ vai kām ca na brāhmaṇavatīm*, etc., as cited above.

An additional requirement to this Āgantuka-nyāya [rule of interpolation] is stated in Mīmāṃsā-sūtra 5.3.20, which observes that these bricks are to be deposited on the central layer prior to the depositing of the *lokaṃ-*

prṇā bricks in order to secure the fruit of the latter [which is nourishment, as stated in the Śatapatha Brāhmaṇa 8.7.2.6–10]. Their express purpose in the altar is to fill up the spaces (*chidra-pūraṇa*). Thus, only the ritual act (*karma*) as explained in the text (*pāṭha*) can be performed. This is, therefore, the *apavāda* [exception] to the *utsarga* [general rule] or Āgantuka-nyāya.

V

A question that arises concerning the bricks mentioned in the above *anārabhyādhīti* statements has to do with their subordination (*aṅga*); that is, are they subordinate to the *citi* [layer of the altar] or the Cayana as a whole? This question is answered in the Mīmāṃsā-sūtra 5.3.15–16. Sūtra 15 offers the *pūrva-pakṣa* or prima facie view that the Soma cups (*graha*) and the bricks are subordinate to the *savana* [the extraction of the juice from the Soma plant] and the *citi* respectively. But the *siddhānta* [conclusion] is that the *grahas* are in fact subordinate to the ritual (*kratu*) and the bricks to the fire (*agni-śeṣa*), i.e., the Cayana. As a result, there is no threefold repetition or recurrence (*āvṛtti*) of the use of the cups [in the Soma pressings or *savana*] nor fivefold repetition of the [laying of the] bricks [in each of the five layers] that the *pūrva-pakṣa* view would entail.

VI

The next point of inquiry concerns two related topics: the vows (*vratas*) observed by the sacrificer and the time when they are to be carried out, which is either immediately after the Cayana or at the end of the Soma sacrifice. This latter question is discussed in the Mīmāṃsā-sūtra 5.3.26–28 and the former subject of the vows is detailed in the Taittirīya Āraṇyaka [1.26.6–7], which reads as follows:

*varṣati na dhāvet; amṛtaṃ vā āpaḥ; amṛtasyā-'nantari-
tyai. Nā-'psu mūtra-purīṣaṃ kuryāt, na niṣṭhīvet, na
vivasanaḥ snāyāt, guhyo vā eṣo 'gniḥ etasyā-'gner anati-
dāhāya. Na puṣkara-parṇāni hiraṇyaṃ vā 'dhitiṣṭhet,
etasyā-'gner anabhyārohāya. Na kūrmasya-'śnīyāt; no-
'dakasyā-'ghātukāny enam odakāni bhavanti; aghātukā
āpaḥ; ya etam agniṇi cinute.*

["He who builds this fire should not run when it is raining; the waters are truly immortal, and this vow is taken for the acquisition of the immortal (sphere). He should neither urinate nor defecate in water; he should not spit nor bathe unclothed, for this fire is hidden

(in the waters) and (this vow is undertaken) to prevent excessive scorching of this fire. He should not step over lotus leaves or gold to prevent an increase of this fire. He should not eat a tortoise (for) water does not contain water creatures that are injurious to him; the waters (too are) noninjurious.”]

These vows are known as the *agnicid-vratas* [vows for the performer of the Agnicayana, i.e., the builder of the fire altar]. They are considered to be both *naimittika* and *puruṣārtha* [“that in which there is an affection of a man, affection marked by an object that is not separated from it”: Mīmāṃsā-sūtra 4.1.2]. Since these rules are *vratas* not performed in accordance with the definition of *puruṣārtha* in sūtra 4.1.2, the “*tad utsarge karmāṇi*” *nyāya* contained in 4.1.3 [*tad-utsarge karmāṇi puruṣā-rthāya śāstrasya-natiśaṅkyatvān na ca dravyaṃ cikirṣyate tenā-rthenā-bhisambandhāt kriyāyaṃ puruṣa-śrutiḥ*]. “(There are) actions in which there is no natural prompting (but that are done) on account of the infallibility of the scripture; nor is there any material substance purified, (but) in an action it is connected with the object, (and also) there is a direct signification that it is *puruṣārtha*”: Sacred Books of the Hindus, vol. 27: 200] suggests that the *paryudāsas* [prohibitive injunctions] are enjoined by a direct statement (*śruti*) in the same manner as the injunction *ne-’kṣeto-’dyantam ādityam* [“He should not look upon the rising sun”: Manusmṛti 4.37] in the *snātaka-vratas* [vows applying to the snātaka or student undergoing ablutions at the finish of his studentship].

Now although the *āhitāgni-vratas* [vows for one who has established the sacred fire = *agnihotrin*] should be followed immediately after the *ādhāna* [setting up of the fire] before the Pavamāna iṣṭi [oblation to Pavamāna], etc., the *agnicid-vratas* are to be carried out only at the end of the Soma sacrifice. This is in accordance with Pāṇini’s rule in 3.2.91: *agnau ceḥ* [translated above p. 183]. Thus, we know the time when the Cayana is completed together with its subordinate Soma rite (*aṅgi-soma-yāga*). Furthermore, the term *āhavanīya* (fire) does not appear in the *āhitāgni-vratas*; only *agni* appears therein, i.e., the *adrṣṭa* [unseen transcendental effect] (*utpatti*) *viśiṣṭa* [specific] fire.

Although it is the practice that a *dakṣiṇā* [sacrificial gift] should be awarded to the priests by the *yajamāna* “sacrificer,” the procedure in the Cayana is for the *adhvaryu* to give to another *brāhmaṇa* a sacrificial gift during the laying of a brick [*vara-dakṣiṇā-dāna*, i.e., granting of a wish-fulfilling sacrificial gift]. This is shown in the statement *ya etām iṣṭakām upadadhyāt sa trīn varān dadyāt* [“Whoever should deposit the brick should grant three wishes”]. In this instance, the *upadhāna* of the brick is performed by the *adhvaryu* according to the *sāmānā-dhikarāṇya* [“state of relating to the same object” or “common relationship”], thus necessitating the granting of the three wishes by this priest and not the *yajamāna*. This is due to the

force of the statement (*vacana*), and is so discussed in Mīmāṃsā-sūtra 3.8.1–2.

VII

The qualifications of the *adhvaryu* are varied. For instance, he must have enough proficiency in carpentry to prepare the Soma vessels; he must have enough proficiency in pottery to prepare the six varieties of brick-sizes; he must know how to be a barber; he must know the full Veda together with its meaning, as well as the Śrautasūtras and the rules (*nyāya*) of Jaimini, etc. Furthermore, he must be an active and effective supervisor over the other participating priests.

The priests who participate in the Cayana belong to four groups (*gaṇa*). The *adhvaryu-gaṇa* follows the Yajurveda with the *adhvaryu* as chief priest and the *pratiprasthātā*, *neṣṭā*, and *unnetā* as his assistants. As such, the *adhvaryu* receives a full share of the sacrificial gift (*dakṣiṇā*), the *pratiprasthātā* a half-share (*ardhī*), the *neṣṭā* a third share (*ṭṛtīyā*), and the *unnetā* a fourth share (*pādī*).

The *hotṛ-gaṇa* recites the Ṛgveda mantras, the chief priest being the *hotṛ*, his assistants being the *maitrāvaruṇa* or *praśāstā* (*ardhī*), the *acchāvāka* (*ṭṛtīyā*), and the *grāvastut* (*pādī*).

The *udgātṛ-gaṇa* recites the Sāmaveda, of which the chief priest is the *udgātṛ* and his assistants the *prastotā* (*ardhī*), *pratihartā* (*ṭṛtīyā*), and *subrahmaṇya* (*pādī*).

The fourth group, the *brahma-gaṇa*, consists of the *brahman* priest who oversees the other three groups and their actions in the rites, thus necessitating proficiency of knowledge of the three Vedas [Ṛg-, Sāma-, and Yajur-]. His three assistants are the *brāhmaṇacchaṃsī* (*ardhī*), *agnīdhra* (*ṭṛtīyā*), and *potā* (*pādī*) [see Sacred Books of the Hindus, vol. 27: 180–182].

Returning to the *adhvaryu*’s duties, there is a *śruti-vākya* [statement in the *śruti*] that reads *nirmanthyene ’ṣṭakā pacanti*, i.e., all bricks should be burnt by the *adhvaryu* by means of the churning of the *araṇi* [kindling] wood. This action is performed in the middle of the Cayana-prayoga [performance] and is duly noted in Mīmāṃsā-sūtra 1.4.12.

VIII

We turn now to the type of injunction (*vidhi*) under which the Cayana is to be included by the Mīmāṃsakas. In the Mīmāṃsā school, injunctions are classified in various ways. One popular classification is the threefold division of *apūrva-*, *niyama-*, and *parisaṃkhyā-vidhi*.

The *apūrva-vidhi* [“original or new injunction”] denotes an injunction

that sets down something otherwise unknown or not established by any of six modes of evidence (*pramāṇa*). These six modes of evidence are *pratyakṣa* [perception], *anumāna* [inference], *śabda* (*laukika*) [verbal testimony: worldly or non-Vedic], *upamāna* [comparison], *arthāpatti* [postulation or implication], and *anupalabdhi* [nonapprehension].

The *niyama-vidhi* ["restrictive injunction"] refers to an injunction that lays down one method of action out of several possible alternative actions.

The *parisaṃkhyā-vidhi* ["injunction of limited prohibition or exclusive specification"] refers to an injunction excluding one established alternative by naming or implying the other alternative, which alone is allowed. The established examples of these three vidhis are respectively: *vrihīn prokṣati* ["He sprinkles the rice": Taittirīya Brāhmaṇa 3.2.5.4]; *vrihīn avahanti* ["He threshes the rice": TB 3.2.5.6]; and *ity āsva-bhidhānīm ādatte* ["He takes the horse's bridle": TS 5.1.2.1].

The following *cayana-vidhis* [injunctions on the Cayana] indicate that they are *apūrva-vidhis*: *ya evaṃ vidvān agniṃ cinute* [see above, Section I], *iṣṭakābhir agniṃ cinute* [above, Section II], and *athā-to 'gnim agniṣṭomenā-muyajanti, tam ukthena . . .*, [Section I: "Now they subsequently offer the oblations to the fire with the Agniṣṭoma, with the Uktha . . ."].

Besides this threefold division, a fourfold division is also mentioned: *utpatti*, *viniyoga*, *prayoga*, and *adhikāra*. The *utpatti-vidhi* [originative injunction] denotes only one ritual action (*karman*); the *viniyoga-vidhi* [applicatory injunction] provides information on the dependent or independent nature of the rite; the *prayoga-vidhi* [injunction of performance] provides the complete description and procedure of the ritual; and the *adhikāra-vidhi* [injunction of qualification] establishes the eligibility of the individual who is to perform the rite. Thus, the first cayana-vidhi cited in the previous paragraph is an *utpatti-vidhi* [as we stated in Section I], while the other two are *viniyoga-vidhis*.

A sixfold division of the vidhi also exists: *kevala-karma-mātra-vidhi* [injunction concerning the whole rite], *anyoddeśana-tad-vidhi* [injunction referring to another rite], *upapadārthavidhi* [injunction referring to a subsidiary rite], *āśritya-vidhi* [dependent injunction], *viśiṣṭa-karma-mātra-vidhi* [injunction on only a specific rite], and *anyoddeśana-tādṛśa-vidhi* [injunction referring to another rite similar to it]. The first and third cayana-vidhis are *anyoddeśana-tad-vidhis* and the second cayana-vidhi is an *upapadārtha-vidhi*. For a further discussion of these vidhis see *Vidhi-rasāyana*, *Vidhi-viveka*, [and the *Mīmāṃsā-bālaprakāśa*, pp. 12–41].

IX

A *śruti-vākya* is cited by the Mīmāṃsakas (to Mīmāṃsā-sūtra 4.3.29) that establishes that the Agnicayana possesses a subsidiary rite (*aṅga*)—the

Sautrāmaṇī—*agniṃ citvā sautrāmaṇyā yajeta* ["Having piled the fire (altar), he should sacrifice with the Sautrāmaṇī"]. This rite is subsidiary to the Agnicayana in the same manner as the Bṛhaspati-sava is subsidiary to the Vājapeya sacrifice by the following statement: *vājapeyene-ṣṭvā bṛhaspati-savena yajeta* ["Having offered the Vājapeya, he should sacrifice with the Bṛhaspati-sava"]. Another example of a subsidiary rite is the Soma sacrifice in relation to the Darsā-pūrṇa-māsa rites [full and new-moon sacrifices]: *darśa-pūrṇa-māsābhyām iṣṭvā somena yajeta* ["Having offered the Darśa-pūrṇa-māsa rites, he should sacrifice with the Soma rite"]. In all three examples the *Ktvā*-suffix [the *kṛt* suffix *-tvā* denoting the gerund] indicates not a sequence of time (Mīmāṃsā-sūtra 4.3.30), but rather subordination of one ritual to a principal rite (*aṅgāṅgi-bhāva*: Mīmāṃsā-sūtra 4.3.31). As a result, though the Sautrāmaṇī is subsidiary to the Cayana, it should nonetheless be performed only after the completion of the Soma sacrifice, that is, at a fixed and proper time (*parva-kāla*) [which occurs, incidentally, on the new-and full-moon days one day after the performance of the Agnicayana and the carrying of the ukhā], and not immediately following the Cayana. Similarly, the Bṛhaspati-sava is performed in the spring and not immediately following the Vājapeya, which is performed in the autumn. (Mīmāṃsā-sūtra 4.3.40–41).

X

In Section II, the names and numbers of bricks employed in the construction of the altar were discussed. In this section their qualities (*iṣṭakā-dharma*) will be discussed. The qualities of these bricks are listed according to color, size, and shape; thus, they are *akṛṣṇatva*, of a deep red color containing no residue of black within them; *akhaṇḍitatva*, of full size and not sectioned or in pieces; and *avakratva*, i.e., straight and symmetrical. All these qualities apply to the *anārabhyādhīta* bricks (the citriṇī and vajriṇī bricks) as well as to the *prakaraṇādhīta* [contextual or interdependent] bricks such as the *prāṇabhṛts* and *srṣtis* (Mīmāṃsā-sūtra 3.6.35) because both possess the same fruit or result, that being the *cayanāpūrva* or invisible potency produced by the Cayana. Similarly, in other contexts the *doha-dharmas* [qualities of the milking] apply to both the milk and curds, as do the *graha-dharmas* [qualities of the Soma-cups] to both the *aindra-vāyava* and *aṃśv-adābhya* cups. An exception to this are the *paśu-dharmas* [qualities or rules (vidhi) of or concerning the animal victim], which apply only to the *aupavasathya-daikṣā-gñiṣomiya-paśu* [the animal victim dedicated to Agni and Soma in the Dīkṣā (initiation), which is prepared and killed on the Upavasatha day, i.e., the day preceding the Soma sacrifice] and not to the *savaniya-paśu* [the animal victim slain on the day of the Soma pressing] or the *anubandhya-paśu* [the principal animal victim]. A discussion of the

above is found in the *Mīmāṃsā-sūtra* 3.6.18–30, 32–34.

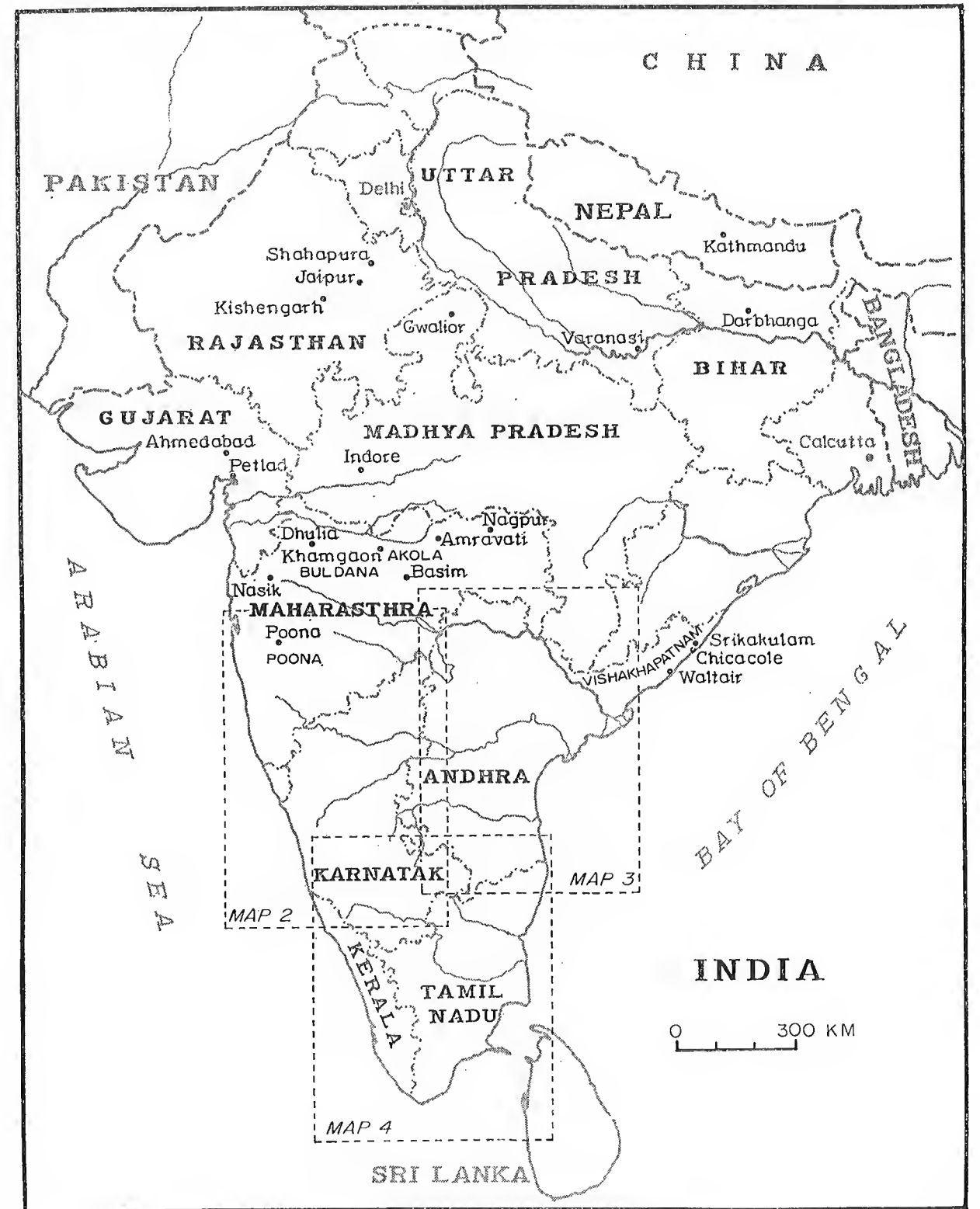
The final point of inquiry is the question of the Agnicayana's subordination to the Soma sacrifices, that is, may the Agnicayana be performed before all or only some of the Soma sacrifices? The answer lies with the former and not the latter opinion.

Among the forty rites (*saṃskāras*), twenty-one are classified into three categories consisting of seven rites each: the *havir-yajña-saṃsthās* [basic form of the oblation offerings: Agnyādhya, Agnihotra, Darśa-pūrṇa-māsa, Āgrāyaṇa, Cāturmāsya, Nirūḍha-paśu-bandha, and Sautrāmaṇī], the *pāka-yajña-saṃsthās* [basic form of the cooked offerings: Aupasana-homa, Vaiśvadeva, Pārvaṇa, Aṣṭakā, Māsi-śraddha, Sarpabali, and Īśānabali], and the *soma-yajña-saṃsthās* [basic form of the Soma sacrifices: Agniṣṭoma, Atyagniṣṭoma, Ukthya, Śoḍaśī, Vājapeya, Atirātra, Aptoryāma]. If the last stotra [chant of a certain number of ṛcs or strophes put to melody] is the Agniṣṭoma, then it is called the Agniṣṭoma-saṃsthāka-jyotiṣṭoma ["Jyotiṣṭoma rite containing the basic form of the Agniṣṭoma." This explains the technical term *saṃsthā* as the basic form of a rite determined by the final stotra]. If the last stotra is the Ukthya, it is called Ukthya-saṃsthāka-jyotiṣṭoma; if it is the Śoḍaśī-stotra, then the rite is the Śoḍaśī-saṃsthāka-jyotiṣṭoma; if the Atirātra-stotra is final, then the rite is the Atirātra-saṃsthāka-stotra. If the Vājapeya-stotra is employed, then the rite is a Vājapeya. If there are two additional Atirātra-stotras at the end of the rite, then it is known as the Aptoryāma-saṃsthā. If the Śoḍaśī is added to the Agniṣṭoma, then the rite is called the Atyagniṣṭoma-saṃsthāka-jyotiṣṭoma. These seven *saṃsthās* each have a dependent Cayana in the same manner as some rites have *prayājas* [preliminary offerings]. The Cayana also is preliminary to all the *Ahīnas* [rites lasting from two to twelve days; each terminating with the performance of an Atirātra] as well as the *Sattras* [ritual session of twelve days or more, usually, however, lasting for a year] such as the *Gavāmayana* and the *Viśvasrjāmayana*. The Agnicayana may be performed as an optional rite whose platform reaches up to knees, navel, or mouth and is composed of one, two, or three thousand bricks, respectively. Before the animal sacrifice (*nirūḍha-paśu-bandha*) one of the five Kṣudra-cayanas is performed and not the Mahā-cayana. Furthermore, the *sādhana-dravya* [material used as the means] consists of not only the bricks, but also the *caru* [a hot liquid oblation prepared with unmashed grain, such as rice or barley, and cooked in water with milk or butter] of rice (*nīvāra*), as well as the tortoise (*kūrma*). This is based upon the [*guṇa-vākyas*] *carum upadadhāti* and *kūrmam upadadhāti*.

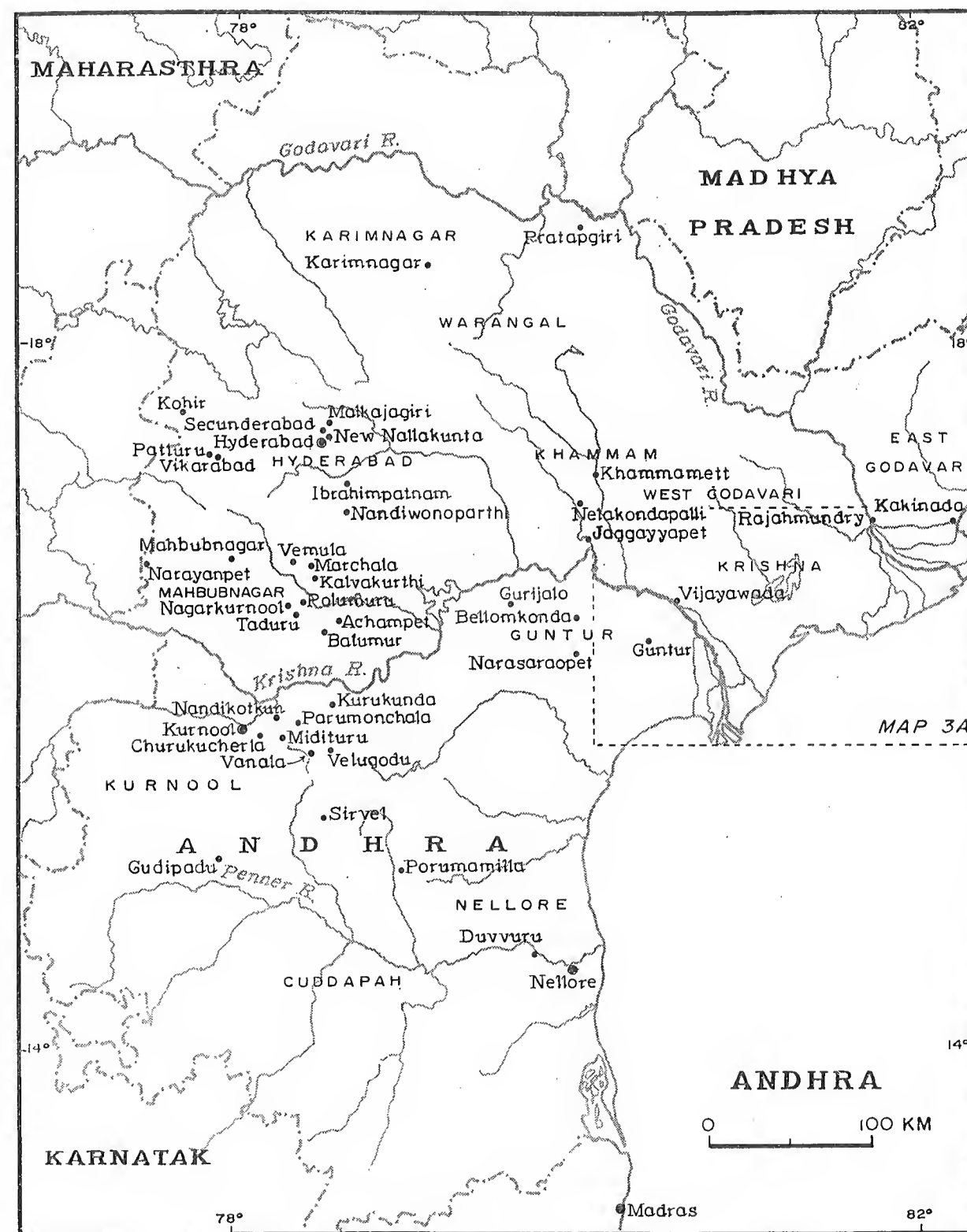
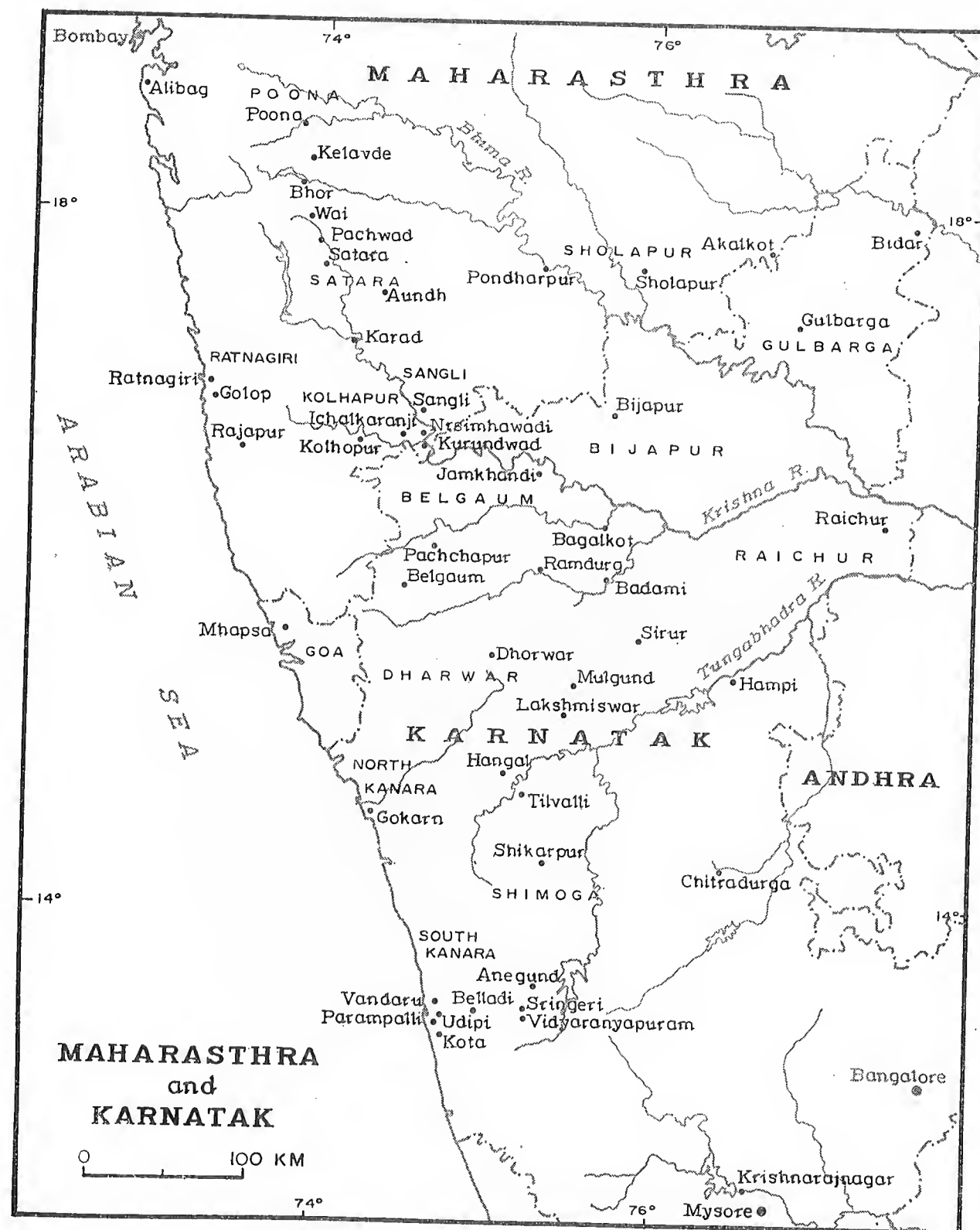
// śubham bhavatu //

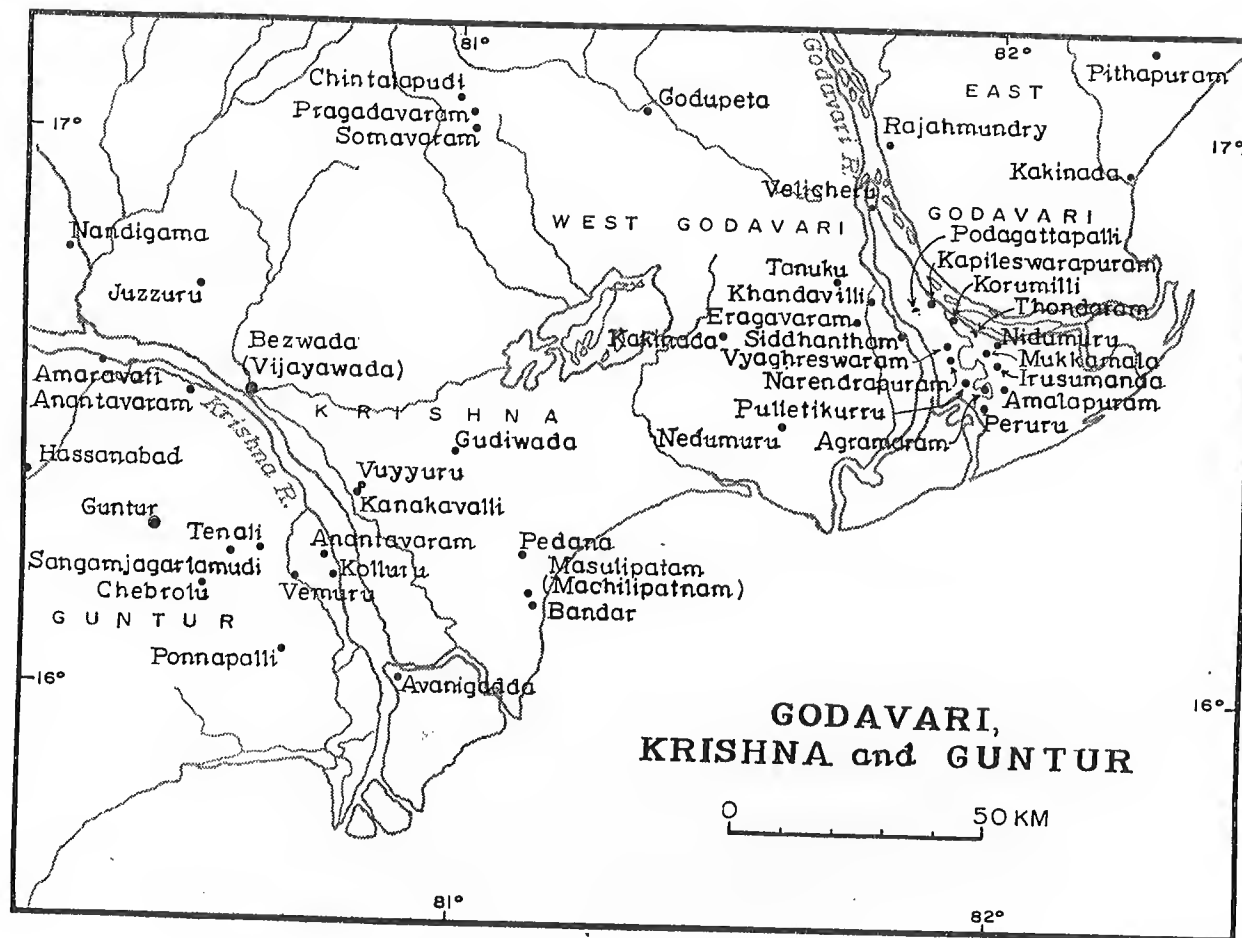
// śrīmān rāghavendro gururājaḥ prīyatām prasannaḥ //

[May there be good fortune. May the gracious and venerable Rāghavendra, the prince of gurus, be pleased.]

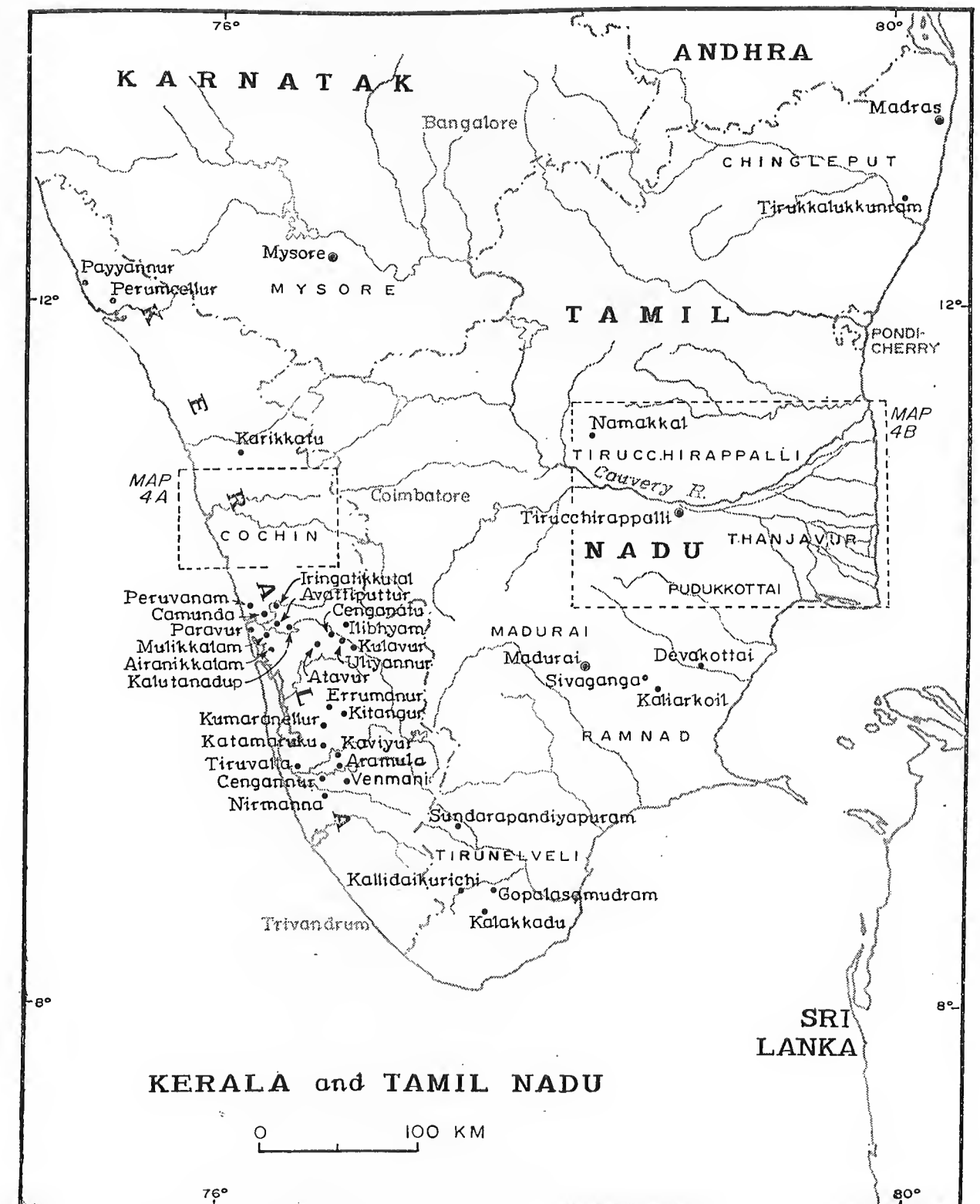


Map 1—Śrauta Traditions: India

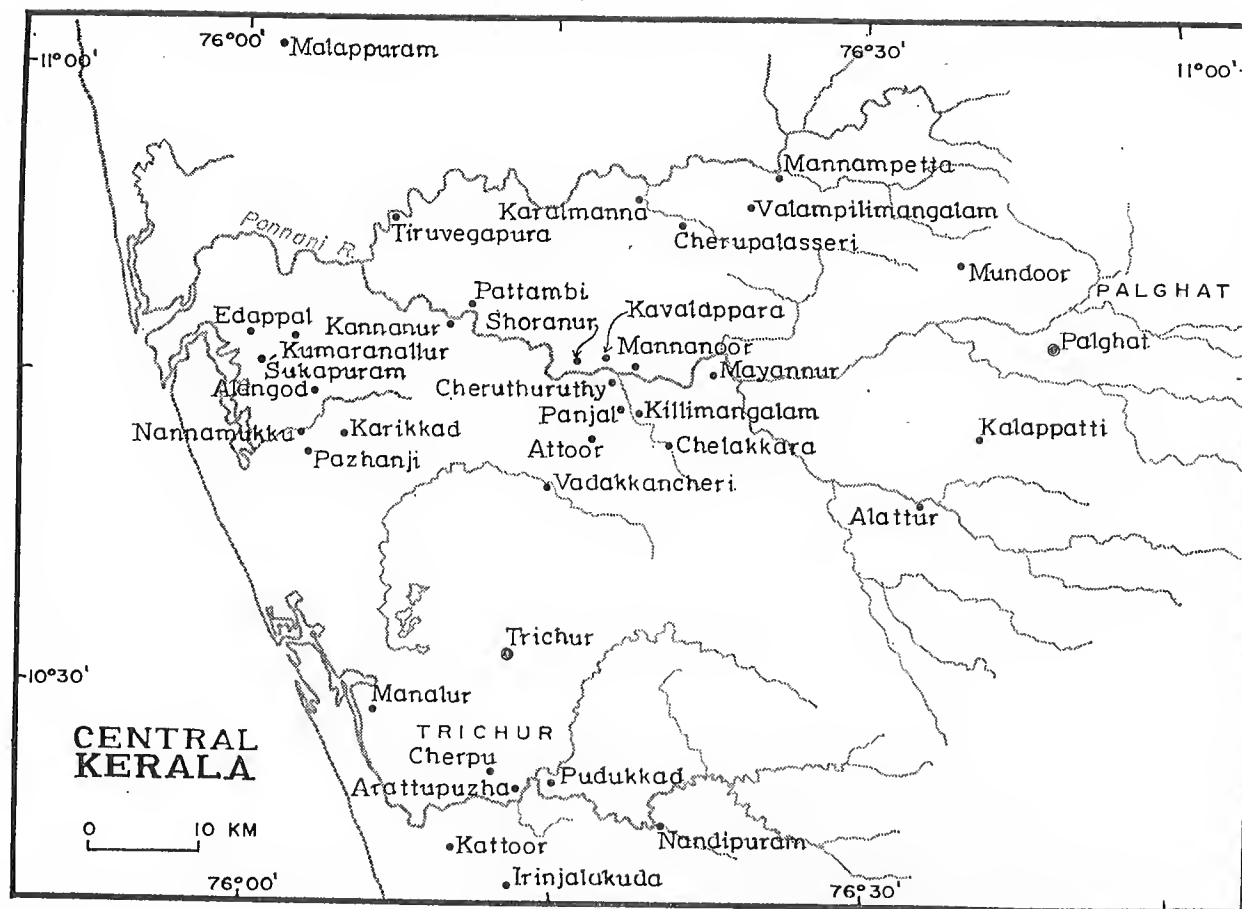




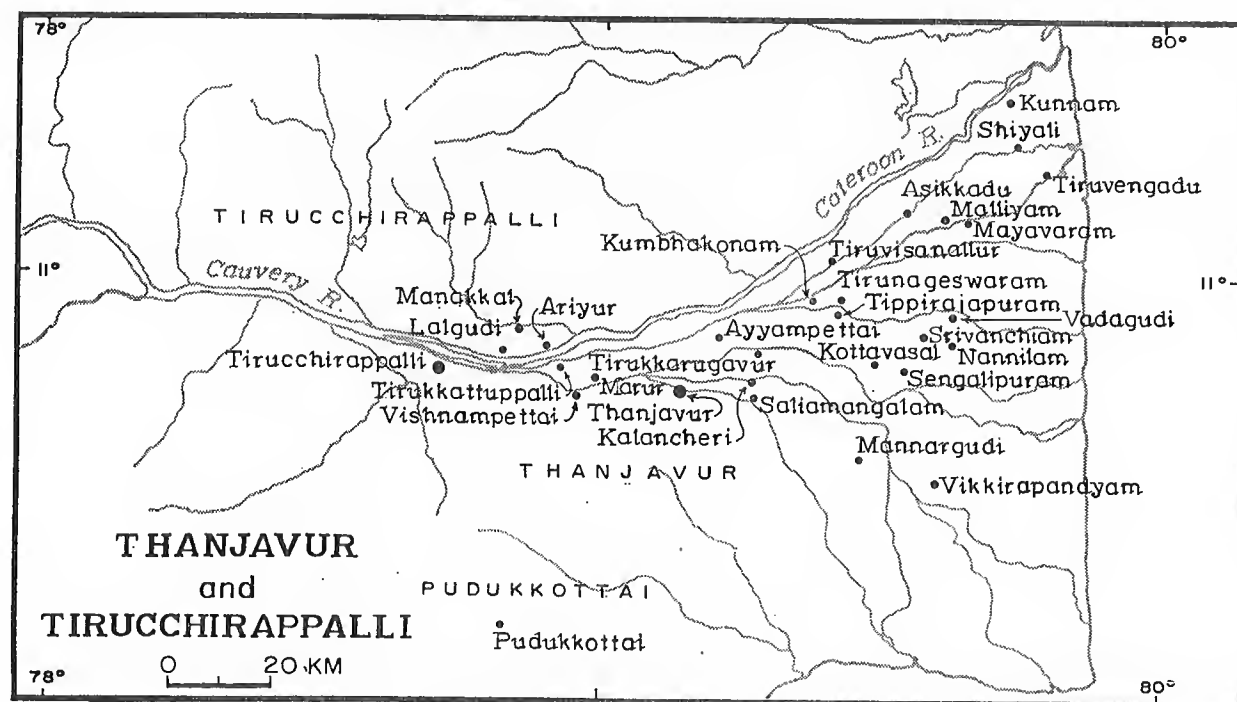
Map 3A—Śrauta Traditions: Godavari, Krishna, and Guntur



Map 4—Śrauta Traditions: Kerala and Tamil Nadu



Map 4A—Śrauta Traditions: Central Kerala



Map 4B—Śrauta Traditions: Thanjavur and Tirucchirappalli

ŚRAUTA TRADITIONS IN RECENT TIMES

C. G. Kashikar and Asko Parpola

THE STUDY OF THE LIVING ŚRAUTA TRADITION IN RETROSPECT

ALTHOUGH BLURRED REFERENCES reached the West considerably earlier, it was not until 1805 that adequate light was shed "on the Vedas or Sacred Writings of the Hindus" by H. T. Colebrooke (cf. Caland 1918).^{*} Although he mentioned most of the śrauta texts, they remained mere names until their scientific study was initiated by Albrecht Weber (1825–1901). Between 1840 and 1865, Weber meticulously worked through the Kāthaka and Vājasaneyi Saṃhitās, the Śatapatha, Pañcaviṃśa, Ṣaḍviṃśa, Aitareya and Kauṣītaki Brāhmaṇas, as well as the śrautasūtras of Kātyāyana, Śāṅkhāyana, and Lāṭyāyana. He had to copy all these texts from manuscripts, since no editions were available, and the only aids to understanding them were the native commentaries accompanying them in the manuscripts. In spite of these difficulties, Weber succeeded in providing the vocabulary of these texts for inclusion in the St. Petersburg Sanskrit dictionary (cf. Weber 1865, pp. 212 ff.). Through his masterly editions comprising some 3,400 quarto pages, he also brought the White Yajurveda within the easy reach of Sanskrit scholars at an early date (1852, 1855, 1859). In 1868 Weber published a systematic and detailed description of the different kinds of śrauta sacrifices, both the havir-yajñas and the soma-saṃsthās, and in 1873 he followed it by a similar paper on the Agnicayana. These pioneering efforts were in due course carried further by Weber himself, Julius Eggeling (1842–1918), Alfred Hillebrandt (1853–1927), Willem Caland (1859–1931) and others.

Because none of the above-mentioned scholars, upon whose philological work so much of our knowledge of the śrauta ritual rests, ever visited India, they could not study the living tradition at first hand. That such a tradition actually existed was brought to notice by Martin Haug (1827–76), who was the first European to witness śrauta performances, in Poona in 1861–62 (cf. his letters to Ewald). In his edition and translation of the Aitareya Brāhmaṇa published in 1863, Haug provided a map of the sacrificial area, including such details as the paths used by the priests and other similar information drawn from direct observation. The work was severely but justly criticized by Weber (1865), who nevertheless also readily acknowledged its merits:

^{*} This research has been partly financed by the Academy of Finland.

In spite of its many less positive features, which we shall have to point out in the following, this publication still remains a most significant piece of work, from which one can gather *much instruction and help* and which therefore is to be hailed with gratitude and warm appreciation. Its most important contribution lies in its copious *notes*, in which the author provides general summarizing descriptions of specific rites and procedures, as well as explanations concerning details of the ritual, which he owes either to oral information from the native priests or to direct observation, derived from his personal presence at sacrifices conducted for the sole purpose of informing him. It is not necessary to elucidate at length the importance of this latter circumstance, and how much more valuable is an understanding based on the observation of a concrete performance than an understanding gained only from the instructions of the ritual texts, which are unclear, aphoristic, and often confusing precisely because of their excessive detail. . . . Through Haug's descriptions, much that I had not understood correctly has become clear to me.

(Translated from Weber 1865, pp. 211–213)

The sacrificial implements acquired by Haug were housed at the Royal Ethnographic Museum of Munich and were published by Caland and Henry in 1906 (I, 253–256 and pls. 1–3) together with another collection presented to the Pitt Rivers Museum in Oxford by R. G. Bhandarkar of Poona and some utensils from Benares procured by W. Crooke. In this connection Caland and Henry refer to the reproductions of "liturgical utensils from India" published by Max Müller as early as 1855 (ZDMG 9, lxxviii ff.), which however are "far from satisfactory." "Implements and Vessels used in Vedic Sacrifice" were also described in 1934 by Raghu Vira, but otherwise, if we exclude the study of Vedic chant and recitation, the present-day śrauta tradition was long neglected.

Almost a century after Haug, the Indian scholars working on the *Śrauta-takoṣa* or "Encyclopaedia of Vedic Sacrificial Ritual" at the Vaidika Saṃśodhana Maṇḍala in Poona "felt that the actual performance of some Śrauta sacrifices would greatly facilitate a proper understanding of the many obscure and recondite Śrauta texts on which they had been working. Some minor *iṣtis* . . . were accordingly performed by the Śrautācārya [Dhruṇḍirāja Dikṣita Bapat] under the auspices of the Maṇḍala. It was, however, soon realised that, in order to obtain a fuller and more comprehensive picture of the Vedic ritual, with all its ramifications, it was necessary to have some major Vedic sacrifice, like the Vājapeya, performed with the cooperation of persons well versed in Śrauta traditions." This quotation is taken from the preface to the brochure brought out by the Vājapeya Performance

Committee in 1955 on the occasion of this sacrifice. (Cf. also the comments of Renou 1950, pp. 26–33, à propos of an *iṣti* that he witnessed at the Maṇḍala.) Important episodes of the Vājapeya were filmed, and photographs were taken, some of which were later utilized by J.A.B. van Buitenen as illustrations in his book on the Pravargya ceremony (1968). The śrauta traditions and especially their differences from the prescribed ritual have been surveyed in two papers by Kashikar (1958, 1964); (cf. p. 246).

The present project of recording in various ways the Agnicayana performed in Kerala in 1975 undoubtedly represents a culmination to the study of the present-day śrauta tradition. Important work is also being done in Nepal by Michael Witzel (see p. 231).

A CATALOGUE OF ĀHITĀGNIS AND ŚRAUTA SACRIFICES IN RECENT TIMES

There is still much scope for further research into the rapidly dwindling survivals of the śrauta tradition. For example, such research could provide us with accurate explanations of many technical terms that are still but vaguely comprehended by foreign students of the Vedic ritual. One explicit purpose of the present paper is to help future researchers in locating informants. We give below a detailed list of the names and addresses of the present-day āhitāgnis; it can be considered fairly representative, although it by no means pretends to be exhaustive. At the same time our purpose is to record the extent to which the Vedic sacrificial religion has been practiced in recent times. With regard to earlier periods this is impossible due to the nature of our sources: the inscriptions, for example, as a rule make mention only of royal sacrifices (cf. Renou 1965, p. 13). For this reason it has seemed appropriate to include in the list even persons no longer living, as well as to list all the known sacrifices, in each case with such details as happen to be available. An inquiry of this kind on a larger scale is another important task of the future, and will undoubtedly result in corrections and additions, especially in regard to past generations.

The compilation of this pilot list was possible only with the ready help of the following persons who have kindly supplied us the information on which it is chiefly based:

IN ANDHRA PRADESH

1. N. S. Krishna Murthy, M. A., B. L., Advocate; Mulpet, Nellore, A. P. (The information dates from 1958.)
2. Honorary Secretary, Swadharma Swaaraajya Sangha, Kowtha Swaaraajya Vihar; 10 Padmarao Nagar, Secunderabad-25, A. P.
3. T. P. Sree Raman; c/o Panyam Cements and Mineral Indus-

PART III PERSPECTIVES

- tries, Ltd., Cementnagar P. O., Kurnool Dt., A. P., 518206. (T. P. Sree Raman kindly communicated to us information supplied by the following three informants.)
4. Madduri Venkateswara Somayajulu; Juzzuru, Nandigama Tq., Krishna Dt., A. P. (135 names, 1975.)
 5. Mamilapalli Yagnaramayya, Sāmavedin and Śrautin; Paramanchala P. O., Nandikotkur Tq., Kurnool Dt., A. P. (13 names, 1975.)
 6. Yallakanti Narasimha Sarma; Yellakallu, Mahaboobnagar Dt., A. P. (15 names, 1975.)

IN KARNATAK

7. Vedaratna Ganesh A. Khare Sastri; Gokarn, N. Kanara, Karnataka. (The information dates from 1958.)
8. Medha Daksinamurti Sanskrit Vidyapitha, Gokarn, N. Kanara, Karnataka. (1976.)

IN KERALA

9. Erkara Raman Nambudiri; Mukkuthala P. O. via Nannam Mukku, Malappuram Dt., Kerala. (1974.)
10. M. M. Itti Ravi Nambudiri; Panjal P. O. via Cheruthuruthy, Kerala. (1971.)
11. N. M. Neelakandan Akkitiripad; Panjal P. O. via Cheruthuruthy, Kerala. (1971.)

IN NEPAL

12. Dr. Michael Witzel; Nepal Research Center, P.O.B. 180, Kathmandu, Nepal. (1975.)

IN TAMIL NADU

13. Dr. V. R. Lakshmikanta Sarma, Dvivedi; Secretary, Hindu-matha Jeevathma Kainkariya Sangham; 14 Kamakshi Josiar Street, Kumbhakonam, Thanjavur Dt., T. N. (67 names, 1972, and the member lists of three sabhāyogas in Kerala.)
14. T. S. Vaidyanathan, B. A., B. L., Advocate; Tirukkarugavur via Kumbhakonam, Thanjavur Dt., Tamil Nadu. (1958.)

IN UTTAR PRADESH

15. Viśvanāth Vāman Dev, Vidyāvāridhi (see below, no. 550);

KASHIKAR & PARPOLA, RECENT ŚRAUTA TRADITIONS

K. 23/118, Dūdhvināyak, 221 001 Vārāṇasī-1, U. P. In addition to private information from Śrī Viśvanāth Vāman Dev dating from 1977 and earlier, we have been able to consult his article "Kāśī kī śraut yāg paramparā" in the May 8, 1966, issue of the Hindi newspaper *Āj*, published in Varanasi. The list of "about ten localities in the city [of Varanasi] where yajnas have been performed during the last hundred years or a little more" that is included in Kuber Nath Sukul's book *Varanasi Down the Ages* (Patna 1974), pp. 327-328, is clearly based on that article, so, practically speaking, we owe all our information on the Vedic traditions of Varanasi to Viśvanāth Vāman Dev. (1957.) Much of the material from Viśvanāth Vāman Dev was kindly put at our disposal by Dr. Wayne Howard (see the bio-bibliographical note on the contributors to this volume).

OUTSIDE INDIA

16. Dr. Rām Somayajulu; c/o Thermodynamics Research Center, Texas A & M University, College Station, Texas 77843 USA. In 1977 he gave us details concerning his ancestors and their yāgas (see nos. 37-41).

The materials in the catalogue have been arranged in alphabetical order by regions, and by larger to smaller units (state, district, town or taluq, and village) within the main regions. Names are in alphabetical order under each geographic unit. The village is entered in the appropriate place under the district if its taluq or neighboring town is not known. An attempt has been made to trace the localities, and a following asterisk denotes that the geographical name can be found on the accompanying maps. The following facts, if available, have been recorded for the āhitāgnis (and sometimes even for other persons intimately connected with the śrauta tradition): his name, given as fully as possible; his Veda/śākhā; his qualifications, especially with regard to recitation and śrauta ritual; whether or not he is living; his sacrifices and their time and place (mentioned separately, if different from that of the yajamāna's residence); the informant (referred to by the numbers in the list above); the date of the information; and occasional notes on other matters of interest.

In the case of each state (Goa, though a separate state, is for practical reasons included in Maharashtra), a short introductory summary is prefixed. Without attempting to be exhaustive, we have in this context also cited epigraphic and other material illustrative of the earlier local śrauta tradition. The accompanying maps have been drawn by Adrienne Morgan, who has also assisted us and the Editor with the identification of localities.

ANDHRA PRADESH

We have records for 200 āhitāgnis in Andhra Pradesh in recent times. As a rule, they have performed at least the Agniṣṭoma (obtaining thereby the title of Somayaji or, in Telugu, Somayajulu), and often also the Agnicayana (the respective title is spelled either Chayanulu or Chainulu; the title Deekshitulu seems to be used neutrally for both a Somayajulu and a Chayanulu). About fifty are still alive, among them Rentachintala Venkatachala Yajulu (no. 150), who with his twenty sacrifices (see the list for details) holds the foremost position among all śrauta sacrificers of present-day India. That the Andhra tradition is very old and vigorous may also be seen from a letter (dated November 20, 1976), that we received just as we were writing these lines, from one of our chief informants, Mudduri Venkateswara Somayajulu (no. 124): "I come from a family of great Vedic scholars. Generation after generation members of our family have performed Vedic sacrifices. This tradition has continued. Myself and two of my brothers have also performed soma yagam. Now I proposed to perform POUNDAREEKA KRATU . . .," i.e., a great Soma feast with eleven pressing days (cf., e.g., ĀpŚS 22.24.8-12).

Most of the Andhra āhitāgnis belong to the Āpastamba school; several of these (fifteen have been specified in our list) have studied the Taittirīya Veda in Ghanapāṭha and many (twenty-five in our list) know it in Kramapāṭha; in addition, we have records of at least nine men (nos. 22, 31, 32, 45, 62, 76, 167, 200, 203) who are proficient in all the priestly capacities of a Soma sacrifice (ādhvaryava, hautra, and audgātra). Usually there is a co-ordination of the Āpastamba, Āśvalāyana, and Kauthuma or Drāhyayana schools in the Soma rituals of Andhra Pradesh.

Even in the past this state stands out as a stronghold of the śrauta tradition, as is borne out by the numerous epigraphic references. In the first century B.C., Khāravēla (who was a Jaina!) is recorded to have performed the Rājasūya in Kalinga (i.e., Orissa and Northern Andhra) (cf. *Ep. Ind.*, XX, 79). According to P.V. Kane (1941, II, 2: 1238 ff., citing *Archaeological Survey of Western India*, V, 60 ff.), "In the very ancient Nanaghat inscription an Āndhra king is described as having performed the rājasūya, two aśvamedhas, gargatrirātra, gavām ayana and aṅgirasām ayana." About 350 AD, the Śālaṅkāyana king Vijayadevavarman, whose capital was at Vengi in Andhra, performed an Aśvamedha (*Ep. Ind.*, IX, 56). In the sixth century the Viṣṇukundin king Mādhavavarman II of the Andhra country performed eleven Aśvamedhas, a Vājapeya and one thousand Agniṣṭomas (Kane 1941, II, 2: 70 ff. and Vājapeya 1955, 51, citing *Ep. Ind.*, IV, 196; XII, 134; XVII, 336, and *IHQ*, IX, 274, 278). In the eighth century a Niṣāda king Pṛthivīvyāghra is said to have been defeated while his aśvamedha horse was roaming about; according to Sircar (in Majumdar and Pusalker, eds., 1954, III, 254) he seems to have occupied the southern part

of the Eastern Cālukya dominions, around the northern fringe of the Nellore district (for this inscription, cf. also Kane 1941, II, 2: 1238 citing *I.A.*, VIII, 273, 278).

Cuddapah*

Gudipadu*

1. Seshadri Somayajulu. Somayāga. (6/1975.)
2. Venkatrama Somayajulu. Somayāga. (6/1975.)

East Godavari*

Amalāpuram*

3. Nukala Subramanya Somayajulu, deceased. Somayāga. (4/1975.)
4. Oruganti Agasthya Somayajulu, deceased. Somayāga. (4/1975.)
5. Oruganti Narasimha Deekshitulu, deceased. Agnicayana. (4/1975.)
6. Oruganti Venkata Deekshitulu, deceased. Agnicayana. (4/1975.)
7. Upadhyajulu (? for Upadyula) Gopalakrishna Chainulu, ghanapāṭhī; living. Agnicayana. (4/1975.)
8. Upadhyajulu Kaseepati Somayajulu; deceased. Somayāga. (4/1975.)
9. Upadhyajulu Laxminarasimha Somayaji. Agniṣṭoma (early 20th century). (1/1958.)
10. Upadhyajulu Polappa Somayajulu; deceased. Somayāga. (4/1975.)
11. Upadhyajulu Seetarama Somayajulu; deceased. Somayāga. (4/1975.)
12. Vupathayula Somayajulu. Probably identical with one of nos. 7-14; cf. no. 7. Agniṣṭoma (early 20th cent.) (1/1958.)

Amalāpuram*: Bhoopayya Agraharam

13. Upadhyajulu S(h)eshadri Somayajulu, Taittirīya, kramapāṭhī; living. Agniṣṭoma (early 20th cent.) (4 + /1975.)
14. Upadhyajulu Yagnanarayana Somayaji. Agniṣṭoma (early 20th cent.) (1/1958.)

Analāpuram*: Mukkamala

15. Bhamidipati Achutarama Somayajulu; deceased. Somayāga. (4/1975.)
16. Bhamidipati Chitti Somayajulu; deceased. Somayāga. (4/1975.)
17. Bhamidipati Sheshadri Somayaji, Taittirīya, ghanapāṭhī. Agniṣṭoma (early 20th cent.) (1/1958.)
18. Bhamidipati Simhadri Somayajulu; deceased. Somayāga. (4/1975.)
19. Bhamidipati Subramanya Somayajulu; deceased. Somayāga. (4/1975.)
20. Bhamidipati Yag(ga)narayana Somayajulu; deceased. Somayāga. (4/1975.)

21. Kompalla Lakshmi Narasimha Somayajulu; deceased. Somayāga. (4/1975.)
 Amalāpuram*: Nedumuru
 22. Srilanka Venkatarama Somayaji, Taittirīya, ghanapāthī, expert in ādhvaryava, hautra and audgātra, paṇḍit. Agniṣṭoma (early 20th cent.) (2/1976.)
 Amalāpuram*: Perūru
 23. Ganti Abbaji Chainulu; deceased. Agnicayana. (4/1975.)
 24. Ganti Somasekhara Somayajulu; living. Agnicayana [sic; cf. his title]. (4/1975.)
 25. Ganti (Ghantī) Suryanarayana Chainulu, ghanapāthī; deceased. Agniṣṭoma (early 20th cent.), Agnicayana. (4 + /1975.)
 26. Nukala Ba(p)panna Somayajulu, Taittirīya, kramapāthī, expert in Ādhvaryava; living. Agniṣṭoma (early 20th cent.). (4 + /1975.)
 Iragavaram
 27. Pisipati Venkatappiah Guru. (2/1976.)
 Irumanda*
 28. Chebrolu Papayya Chayanulu; deceased. Agnicayana. (4/1975.)
 Kakinada*
 29. Bulusu Bhadradi Chayanulu; deceased. Agnicayana. (4/1975.)
 Kapileshwarapuram*
 30. Duvvuri Suryaprakasha Chayanulu. Agniṣṭoma; Sāgnicitya Aptoryāma (early 20th cent.). (1/1958.)
 Korumilli* (Karumilli given for nos. 32, 34, 35; v.1. Kurumilli for 32.)
 31. Bhamidipati Mit(h)ranarayana Yajulu, Taittirīya, kramapāthī, expert in ādhvaryava, hautra, and audgātra; living. Agniṣṭoma, Sāgnicitya Aptoryāma, Sarvatomukha, Pauṇḍarīkam. (4 + /1975.)
 32. Bhamidipati S(h)eshadri Somayajulu, Taittirīya, kramapāthī, expert in ādhvaryava, hautra, and audgātra; living. Agniṣṭoma (early 20th cent.). (4+/1975.)
 33. Bhamidipati Yag(ga)narayana Somayajulu, kramapāthī; living. Somayāga. (4/1975.)
 34. Duvvuri Sarveswara Somayajulu; deceased. Somayāga. (4/1975.)
 35. Duvvuri Suryanarayana Chainulu; deceased. Agnicayana. (4/1975.)
 Narendrapuram*
 36. Pulyala Somayajulu; living. Somayāga. (4/1975.)
 Piṭhapuram* (the town has its name from the piṭha of Puruhūtikā Śakti; in the Purāṇas Piṭhapuram is called Dakṣiṇa-Kāśi and Pāda-Gayā). The following family of Sāmavedins and Śaivite advaitins, according to their family tradition, originally hail from a town called Gollakota.
 37. Rāma Somayājulu (1660–1730), somāyaga (1/1958); father of
 38. Sarveśvara Somayājulu (1700–1780), somayāga; father of

39. Subrahmaṇya Somayājulu (1730–1800), somayāga; father of
 40. Sundara Rāma Deekshitulu (1760–1840), āhitāgni; father of
 41. Subrahmaṇya Deekshitulu (1800–1900), āhitāgni; father of Vēṇkaṭ Rāmayya (1880–1958), teacher of chemistry; father of Rāma Somayājulu (1928–), doctor of chemistry, who according to the traditional belief represents his ancestor Rāma Somayājulu (no. 37), “Since a person who performs Somayaaga is not born for seven generations.” Father of Rām Gopal (1962–), Dr. Somayājulu performs the Prāṇāgnihoṭra. (16/1977)
 Podagattapalli*
 42. Ramilla Bapanna Avadhanulu Dikshitulu.
 Pulletikurru*: Vakkalanka: Srirama(puram) Agraharam
 43. Bhamidipati Yagneswara Somayajulu, Taittirīya, kramapāthī; living. Agniṣṭoma (early 20th cent.) (4 + /1975.)
 44. B(h)ulusu Vyaghreswara Chayanulu, Taittirīya, kramapāthī; living. Agniṣṭoma (early 20th cent.); Agnicayana. (4 + /1975.)
 45. Duvvuri (v.1. Davuri) Yagneswara (Poundareeka-)Yajulu, Taittirīya, kramapāthī, expert in ādhvaryava, hautra, and audgātra; living. Agniṣṭoma; Vyūḍha Pauṇḍarīka (early 20th cent.). (4 + /1975.)
 Pulletikurru*: Vyaghreswaram
 46. Bulusu Anantharama Chayanulu; deceased. Agnicayana. (4/1975.)
 47. Bhulusu Kamaleswara Somayajulu, kramapāthī; living. Somayāga. (4/1975.)
 48. Bulusu Kameswara Somayajulu, Taittirīya, kramapāthī; living. Agniṣṭoma (early 20th cent.). (4 + /1975.)
 49. Bulusu Linganna Somayajulu; living. Somayāga. (4/1975.)
 50. Bulusu Rama Somayajulu; deceased. Somayāga. (4/1975.)
 51. Pulleola Laxminarayana Somayaji. Agniṣṭoma (early 20th cent.) (2/1976.)
 Rajahmundry (Rājahmahendravaram)*
 52. (Rajahmundry?) Vishvanathulu Somayajulu. Agniṣṭoma (20th cent.) (2/1976.)
 Tondaram*
 53. Kuchibotla Subramanya Somayajulu; deceased. Somayāga. (4/1975.)
 Velicheru*
 54. Emani (v.1. Lemeni) Ramachandra Somayajulu; living. Agniṣṭoma (early 20th cent.) (4 + /1975.)
 Exact place not given
 55. Lanka Venkateswara Somayajulu, ghanapāthī; living. Somayāga. (4/1975.)

Guntur***Anantavaram***

56. Kunapati Suryanarayana Somayajulu; deceased. Somayāga. (4/1975.)

Arupalli

57. Ponnappalli Dakshinamurthy Somayajulu; deceased. Somayāga. (4/1975.)

Bellamko(n)da*: Cwotapapayapalem

58. Sanndinam Seetharama Diksitolu. (2/1976.)

Guntur*

59. Dendukuri Hanuma(n)th Deekshitulu, ghanapāṭhī; living. (4/1975.)
 60. Dendukuri Hanumanth Somayajulu; deceased. Somayāga. (4/1975.)
 61. Dendukuri Venkata Somayajulu; deceased. Somayāga. (4/1975.)
 62. Dendukuri Yagnanarayana Somayaji, ghanapāṭhī, expert in ādhvaryava, hautra and audgātra. Agniṣṭoma (early 20th cent.) (2/1976.)
 63. Dhulipala Ayodhyarama Somayajulu; deceased. Somayāga. (4/1975.)
 64. Dhulipala Srirama Somayajulu; deceased. Somayāga. (4/1975.)
 65. Ponnada Ramakoti Somayajulu; deceased. Somayāga. (4/1975.)
Gurajāla (Gurazāla, Guruzāla)*
 66. Kasamajhala Adinarayana Somayajulu; deceased. Somayāga. (4/1975.)

Hassanabad

67. Chintalapati Srirama Somayajulu; deceased. Somayāga. (4/1975.)

Kollūru*

68. Kuppa Venkatappa Chainulu; deceased. Agnicayana. (4/1975.)
 69. Mangipudi Subramanya Sastry, expert in hautra. (1/1958.)
 70. Vempati Subrahmanya Somayajulu; deceased. Somayāga. (4/1975.)

Narasaraopet*

71. Chintalapati Siddhanti Somayajulu; deceased. Somayāga. (4/1975.)

Ponnappalli*

72. Rampalli Bhadrappa Deekshitulu; deceased. Agnicayana. (4/1975.)
 73. Rampalli Kama Deekshitulu; deceased. Agnicayana. (4/1975.)

Saipalle

74. Hotha Venkatarama Somayaji. Agniṣṭoma (early 20th cent.) (2/1976.)

Tenāli*

75. Vishnubotla Laxmipati Somayajulu. Agniṣṭoma (early 20th cent.) (1/1958.)

Tenāli-2*: Marispeta

76. Dendukuri Venkatappa Yag(na)narayana Yajulu, ghanapāṭhī, expert in ādhvaryava, hautra and audgātra; living. Agniṣṭoma; Vyūḍha Pauṇḍarika (early 20th cent.) (4 + /1975.)

Tenāli*: Patha

77. Bhagavathula Anjaneya Somayaji. (2/1976.)

Tenāli*: Ramalingeswarapet

78. Vishnub(h)otla Adinarayana Chainulu, Taittirīya, ghanapāṭhī; living. Agniṣṭoma; Sāgnicitya Aptoryāma (early 20th cent.) (4 + /1975.)
 79. Vishnubotla Bheema Sankara (v.l. Bhimashankar) Somayajulu, Taittirīya, kramapāṭhī; living. Agniṣṭoma (early 20th cent.) (4 + /1975.)
 80. Vishnubotla Ramachandra Deeksitulu, Taittirīya, ghanapāṭhī. (2/1976.)

Tenāli*: (Saṅgam) jāgarlamūḍi*

81. Avvari (v.l. Auvari) Sreerama Chayanulu, kramapāṭhī; living. Agniṣṭoma; Sāgnicitya Aptoryāma; Bṛhaspatisava (Hyderabad, early 20th cent.). (4 + /1975.)

Vemuru*

82. Chivukula Venkataramana Deeksitulu; deceased. Agnicayana. (4/1975.)

Hyderabad***Ibrahimpatnam*: Nandi Vanaparthi P.O.**

83. Nandi Vanaparthi Seetharama Somayajulu; deceased. Somayāga. (6/1975.)

New Nallakunta*

84. Yanamandra Yagneswara Somayaji. Agniṣṭoma (20th cent.) (2/1976.)

Secunderabad*

85. Yenamandra Yag(ga)narayana Somayajulu, kramapāṭhī; living. Somayāga. (4/1975.)

Secunderabad*: Malkajagiri

86. Malladi Veera Raghava Somayajulu; living. Somayāga. (4/1975.)

Secunderabad*: Padmaraonagar: Chilkalguda

87. Dendukuri Agnihotra Somayajulu, Taittirīya, ghanapāṭhī, expert in ādhvaryava; living. Agniṣṭoma (early 20th cent.). (4 + /1975.)

Vikarabad*: Patluru (Potluru?)

88. Narahari Chayanayaji. Sarvatomukha (1928). (1/1958.)
 89. Patluri Manikya Diksita. Agniṣṭoma (1960). (= no. 91?) (2/1976.)
 90. Yajnesvara Somayaji. (1/1958.)

*Karimnagar**

Karimnagar*

91. Potluri Manikya Somayajulu; deceased. Somayāga. (= 89?) (4/1975.)

*Khammam**

Nela Kondapalli*

92. Hari Yag(ga)narayana Somayajulu; deceased. Somayāga. (4/1975.)
 93. Kavuru Anantarama Somayajulu; deceased. Somayāga. (4/1975.)
 94. Pandya Bhageeratha Somayajulu; deceased. Somayāga. (4/1975.)
 95. Pandya Vasudeva Somayajulu; deceased. Somayāga. (4/1975.)
 96. Pandya Viswanadha Somayajulu; deceased. Somayāga. (4/1975.)
 97. Pandya Yag(ga)narayana Somayajulu; deceased. Somayāga. (4/1975.)

Venusore

98. Kalakodimi Satyanarayana Somayajulu; deceased. Somayāga. (4/1975.)

*Krishna**

Avanigadda*

99. Chitti Subramanya Somayajulu; deceased. Somayāga. (4/1975.)

Bandar*

100. Renduchintala Subramanya Chayanulu. Agniṣṭoma; Sāgnicitya Aptoryāma (20th cent.). (2/1976.)

Gudiwada: Sayapuram*

101. Chilukuri Ramakrishna Somayajulu; deceased. Somayāga. (4/1975.)
 102. Kappagantu Janakirama Somayajulu; deceased. Somayāga. (4/1975.)
 103. Kappagantu Subramanya Chayanulu; deceased. Agnicayana. (4/1975.)
 104. Kappagantu Yagna Venkata Chayanulu, Taittiriya, kramapāṭhī, expert in ādhvaryava. Agniṣṭoma; Sāgnicitya Aptoryāma (20th cent.) (2/1976.)
 105. Kappagantula Yag(ga)narayana Chainulu, kramapāṭhī; living. Agnicayana. (4/1975.)

Jaggayyapet(a)*

106. Amaravadi Mrutyunjaya Somayajulu; deceased. Somayāga. (4/1975.)
 107. Amaravadi Subrahmanya Deekshitulu; deceased. Agnicayana. (4/1975.)

108. Amaravadi Vasudeva Somayajulu; deceased. Somayāga. (4/1975.)
 109. Amaravadi Yag(ga)narayana Somayajulu; deceased. Somayāga. (4/1975.)
 110. Challa Chayanulu; deceased. Agnicayana. (4/1975.)
 111. Kappagantula Lakshmiapati Chainulu; living. Agnicayana. (4/1975.)

Machilipatnam*

112. Rentachintala Yagganarayana Chainulu, kramapāṭhī, living. Agnicayana. (4/1975.)

Machilipatnam*: Godupeta

113. Yadavalli Kameswara Somayajulu; living. Somayāga. (4/1975.)

Masulipatam*

114. Cheruvu Anjaneya Somayajulu; deceased. Somayāga. (4/1975.)
 115. Cheruvu Lakshminarayana Chainulu; deceased. Agnicayana. (4/1975.)
 116. Cheruvu Venkataratna Chainulu; deceased. Agnicayana. (4/1975.)
 117. Jonnalagadda Jogi Somayajulu; deceased. Somayāga. (4/1975.)
 118. Rentachintala Subramanya Somayajulu; deceased. Somayāga. (4/1975.)

Nandigāma (Nandigrāma)*

119. Yadavalli Kama Somayajulu; deceased. Somayāga. (4/1975.)
 120. Yadavalli Rama Somayajulu; deceased. Somayāga. (4/1975.)

Nandigāma*: Juzzuru* (Jujjuru)

121. Madduri Rajeswara Somayajulu, Taittiriya, kramapāṭhī, expert in śrauta, has participated in many yajñas; living (brother of nos. 122 and 124). Agniṣṭoma (20th cent.). (4 + /1975.)
 122. Madduri Suryanarayana Somayajulu, Taittiriya, kramapāṭhī; living (brother of nos. 121 and 124). Agniṣṭoma (20th cent.). (4 + /1975.)
 123. Madduri Venkata Subrahmanya Somayajulu; deceased. Somayāga. (4/1975.)
 124. Madduri Venkateswara Somayajulu, Taittiriya, kramapāṭhī, expert in śrauta, has participated in many yajñas and functioned as the adhvaryu in an Agnicayana; living (brother of nos. 121 and 122, our informant no. 4). Agniṣṭoma (20th cent.); intends to perform Paundarika. (4 + /1976.)
 125. Madduri Yag(ga)narayana Somayajulu; deceased. Somayāga. (4/1975.)
 126. Vindamuri Rama Somayajulu; deceased. Somayāga. (4/1975.)

Pedana*

127. Yadavalli Subrahmanya Somayajulu; deceased. Somayāga. (4/1975.)

Vijayawada (Vijayavāḍa, Bezwada)*

128. Channavajhala Purnanda Somayajulu; deceased. Somayāga. (4/1975.)
129. Channavajhala Suryanarayana Somayajulu; deceased. Somayāga. (4/1975.)
130. Channavajhala Vasudeva Somayajulu; deceased. Somayāga. (4/1975.)
131. Dendukuri Venkatasubramanya Somayaji, Taittiriya, ghanapāṭhi, paṇḍit (= no. 144?). Agniṣṭoma (20th cent.). (2/1976.)
132. Ganti Mahapatrani Visweswara Chainulu; deceased. Agnicayana. (4/1975.)
133. Kapilavayi (Kapilavayi?) Srirama Somayajulu; deceased. Somayāga. (4/1975.)
134. Kappagantula Laxminarasimha Yajulu. (1/1958.)
135. Kottapalli Lakshminarasimha Somayajulu; deceased. Somayāga. (4/1975.)
136. Kottapalli Venkata Krishna Somayajulu; deceased. Somayāga. (4/1975.)
137. Rani Pratapa Chayanulu; deceased. Agniṣṭoma; Sāgnicitya Aptoryāma (20th cent.). (4 + /1975.)
138. Vempati Rama Chainulu; deceased. Agnicayana. (4/1975.)
139. Vishnubotla Anjaneya Chainulu, kramapāṭhi; living. Agnicayana. (4/1975.)
140. Vishnubotla Jagannadha Deekshitulu; living. (= no. 151 ?) Agnicayana. (4/1975.)
141. Vishnubotla Jagannadha Somayajulu; deceased. (= no. 151 ?) Somayāga. (4/1975.)
142. Vishnubotla Venkatanarayana Yajulu; deceased. Sarvatomukha. (4/1975.)
143. Vishnubotla Venkateswara Deekshitulu; living. Agnicayana. (4/1975.)

Vijayawada*: Buckinghampet

144. Dendukuri Subramanya Somayajulu, ghanapāṭhi; living. (=131 or 203?) Somayāga. (4/1975.)

Vijayawada*: Governorpet

145. Malladi Ramakrishna Chainulu; deceased. Agnicayana. (4/1975.)
146. Tangirala Anjaneya Yajulu; deceased. Panuṇḍarika. (4/1975.)

Vijayawada*: Krishnalanka Agraharam

147. Dendukuri Venkatesvara Dikshitulu, Taittiriya, kramapāṭhi. (2/1976.)
148. Kottapalli (v.1. Kothapalli) Venkateswara (Poundareeka-)Yajulu; living. Agniṣṭoma; Sāgnicitya Pauṇḍarika (20th cent.). (4 + /1975.)

149. Kunapuli Harichandra Somayaji. (2/1976.)

150. Rentachintala (v.1. Renduchintala) Venkatachala Yajulu, Āpastambasūtra; living. Bahuyāji: has performed twenty śrauta sacrifices, which is the maximum number anybody has performed in recent times. These include several Saumika Cāturmāsyas, Agniṣṭoma, Atyagniṣṭoma, Śoḍaśi, Sāgnicitya Aptoryāma, Kuru-vājapeya, Brhaspatisava with Kāṭhakacayana, Sarvatomukha, Āpta-vājapeya (Gangalakarru, 1945), Vyūḍha Pauṇḍarika with Dvisāhasracayana (1944), Samūḍha Pauṇḍarika (Marripudi, Nellore, 1953) and Vyūḍha Pauṇḍarika with Triśāhasracayana (Kallur, Guntur, 1954). (4 + /1975.)
151. Vishnubotla Jagannadha Somayaji. (= 140 or 141 ?) Taittiriya, ghanapāṭhi. Agniṣṭoma (20th cent.). (2/1976.)

Vijayawada-3*: Purnanandampet (Poornanandapeth) P.O.

152. Ganti Suryanarayana Chainulu; deceased. Agniṣṭoma; Sāgnicitya Aptoryāma (20th cent.). (4 + 6 + /1975.)
153. Ganti Venkateswara Somayajulu; deceased. Somayāga. (6/1975.)
154. Pamidimarri Lakshmana (Sastry) Somayajulu; living. Agniṣṭoma (20th cent.). (4 + /1975.)
155. Pamidimarri Purnanda Somayajulu; deceased. Somayāga. (4/1975.)

Vijayawada*: Satyanarayanapuram

156. Kottapalli Deekshitulu Chainulu, kramapāṭhi; living. (= 157 ?) Agnicayana. (4/1975.)
157. Kothapalli Subramanya Chayanulu. (= 156 ?) Agniṣṭoma; Sāgnicitya Aptoryāma (20th cent.). (2/1976.)

Vuyyuru*

158. Cheruvu Anantarama Somayajulu; deceased. Somayāga. (4/1975.)

Vuyyuru*: Kanakavalli

159. Kapilavayi Yagneswara Sastri. (1/1958.)

Kurnool*

Buggarameshwar

160. N. N. Vājapeya (Bugga Rameshwar, 1935). (Cf. Vājapeya 1955: 51.)

Churukucherla*

161. Patangi Sesha Somayajulu; deceased. Agniṣṭoma. (5/1975.)
162. Soora Somayajulu; deceased. Agniṣṭoma. (5/1975.)
163. Viruvinti Chandrasekhara Powndareeka Sarvatomukha Yajulu; deceased. Agniṣṭoma; Sarvatomukha; Pauṇḍarika; Brhaspati-savana (*sic*); Diva(h)śyena-iṣṭi; Nakṣatra-iṣṭi. (5/1975.)

Nandikotkur*: Kurukunda*

164. Pratapagiri Lakshmi Narasimha Somayajulu; deceased. Agni-
ṣṭoma. (5/1975.)
165. Viruvinti Chenna Krishna Poundareeka Yajulu; deceased. Agni-
ṣṭoma; Pauṇḍarika; Pañcakarakas (= ?). (5/1975.)
166. Viruvinti Subramanya Sarvatomukha Yajulu; deceased. Agni-
ṣṭoma; Sarvatomukha; Āruṇaketuka. (5/1975.)
- Nandikotkur*: Mīditūru (Midutūru)*
167. Patri Venkata Subramanya Sagnichit Chayanulu, with the title
Śrauta-smārta-nidhi, expert in ādhvaryavam, hautram, and
audgātram up to aptoryāma; deceased. Agniṣṭoma; Mahāgni-
cayana; Bṛhaspatīsavana (*sic*); Sautrāmaṇi; etc. (5/1975.)
- Nandikotkur*: Pārumanchala*
168. Mamilapalli Bangaru Somayajulu; deceased. Agniṣṭoma; Atirā-
tra-yāga. (5/1975.)
169. Mamil(1)apalli Yagnaramayya, Sāmavedin, expert in śrauta
(possessing manuscripts on many aspects of the Vedic sacri-
fices), has performed the audgātra in Mahāgnicayana and other
sacrifices; living (our informant no. 5). (5/1975.)
- Nandikotkur*: Vanala
170. Venkatrama Somayajulu; deceased. Agniṣṭoma. (5/1975.)
- Siruvella*: Veravalli
171. Subramanya Somayajulu; deceased. Somayāga. (6/1975.)
- Velugodu*
172. Gangavajhula Rameswara Somayajulu; deceased. Has together
with his brother written a book entitled *Saprayoga-pūrta-can-
drikā*. Atyagniṣṭoma. (5/1975.)
173. Kristipati Kodandarama Poundareeka Yajulu, expert in sāma-
gāna; deceased. Agniṣṭoma; Pauṇḍarika. (5/1975.)
174. Kistipadu Lakshmi Narasimha Sagnichit Vajapeya Yajulu, with
the title *sāmagāyana-sārvabhauma*, expert in sāmagāna; deceased.
Agniṣṭoma, Mahāgnicayana; Vājapeya; Bṛhaspati-savana (*sic*).
(5/1975.)
175. Kistipadu Ramachandra Somayajulu; deceased. Agniṣṭoma.
(5/1975.)
- Mahabūbnagar***
- Achampet: Balumuru P.O.
176. Balumuru Varada Deekshitulu; deceased. Agniṣṭoma. (6/1975.)
- Kalvakurthi*: Raghupathipet P. O.
177. Surubhirama Deekshitulu. Somayāga. (6/1975.)
- Kalvakurthi*: Vemula
178. Vemula Yagna Somayajulu, expert in Ṛgveda; deceased. Agni-
ṣṭoma. (6/1975.)
- Mahabūbnagar***

179. Gangapuram Narahari Deekshitulu; living. Somayāga. (6/1975.)
- Marchala P. O.
180. Marchala Ramacharyulu; living. Agniṣṭoma. (6/1975.)
- Nagar Kurnool*
181. Medipuru Narasimha Deekshitulu; deceased. (His father had
performed Agnicayana.) Somayāga; Caturmāsya. (6/1975.)
- Nagar Kurnool*: Polumuru P. O.
182. Pullayya Chayanulu; deceased. Agnicayana. (6/1975.)
- Nagar Kurnool*: Taduru P. O.
183. Taduru Sesha Deekshitulu; deceased. Agniṣṭoma; Pauṇḍarika.
(6/1975.)
- Palamūru P. O.
184. Palamooru Munikonda Venkayya Deekshitulu; deceased. So-
mayāga. (6/1975.)
- Nellore***
- Nellore*
185. Aramittala Seetarama Somayajulu; deceased. Somayāga. (4/
1975.)
186. Gollapudi Lakshmana Somayajulu; deceased. Somayāga. (4/
1975.)
187. K. Subramanya Somayajulu. Agniṣṭoma (Allur, Nellore, 1953).
(1/1958.)
- Srikakulam***
- Seela
188. Arya Somayajulu Subramanya Chainulu; deceased. Agni-
cayana. (4/1975.)
- Śrikākulam (Chicacole)*
189. Ganti Narasimha Somayajulu; deceased. Somayāga. (4/1975.)
- Vishakhapatnam**
- Waltair
190. Ganti Jogi Somayaji, born in 1901 in Andhra Pradesh. (Retired
professor of Telugu in the Andhra University at Waltair. In-
cluded here as an example of a brahmin name which indicates
that his ancestors performed sacrifices.)
- Warangal***
- Illinda
191. Illinda Somayajulu; deceased. Somayāga. (4/1975.)

*West Godavari**

Chintalapudi

192. Channavajhala Subramanya Chainulu; deceased. Agnicayana. (4/1975.)

Chintalapudi: Pragadavaram

193. Kottapalli (v.1. Kothapalli) Lakshminarayana Chayanulu, kramapāthī; living. Agniṣṭoma, Sāgnicitya Aptoryāma. (4 + /1975)
194. Kothapalli Yagneswara Somayaji. Agniṣṭoma (20th cent.). (2/1976.)

Chintalapudi: Somavaram

195. Turuluri Brahmananda Somayajulu; deceased. Somayāga. (4/1975.)

Eragavaram

196. Vishnubotla Hanumad Dikshitulu. (2/1976.)

Khandavalli*

197. Peesapati Venkappa Somayajulu; deceased. Somayāga. (4/1975.)*
198. Peesapati Venkataratna Somayajulu; deceased. Somayāga. (4/1975.)

Sidd(h)āntam*

199. Chivukula (v.1. Cheruvu) Sivarama Somayajulu, Taittirīya, kramapāthī; living. Agniṣṭoma. (4 + /1975.)

Tanuku*

200. Gandikota Gurumurthy Sastry, expert in ādhvaryava, hautra and audgātra. (1/1958.)

District uncertain

Alandi (= Aland in Gulbarga Dt., Mysore State?)

201. Keshava Dikshita. Agniṣṭoma (Hyderabad, early 20th cent.). (1/1958.)
202. Sivappa Dikshita. Agniṣṭoma (Hyderabad, early 20th cent.); Vājapeya (Vinavanta, Warangal, 1945). (Cf. Vājapeya 1955:51.)

Kothapeta

203. Dendukuri Subramanya Dikshitulu, expert in ādhvaryava, hautra, and audgātra. (= no. 144?) (1/1958.)

Pathapattabhipuram

204. Dendukuri Venkatahanumad, ghanapāthī. Agniṣṭoma (early 20th cent.). (2/1976.)

? (now in Madras, Tamil Nadu)

205. Yenamandra (v.1. Yanamandra) Subramanya Chayanulu, kramapāthī; living. Agniṣṭoma; Sāgnicitya Aptoryāma (early 20th cent.). (4 + /1975.)

? (see no. 343)

Since the above surnames have geographical significance, referring usually to the family's native place, they are indexed here with an indication of their rather interesting distribution:

Amaravadi (Amarāvati)*: Krishna, Jaggayyapet (4)

Aramittala: Nellore (1)

Avvari (Auvvari): Guntur, Tenali, Sangamjāgarlamūḍi (1)

Balamuru: Mahabubnagar, Achampet, Balumuru (1)

Bhagavathula: Guntur, Tenali, Patha (1)

Bhamidipati: All in East Godavari: Amalapuram, Mukkamala

(6), Korumilli (3), Pulletikurru, Vakkalanka, Srirampuram (1)

B(h)ulusu: All in East Godavari: Kakinada (1), Pulletikurru, Vakkalanka (1) Vyaghreswaram (6)

Challa: Krishna, Jaggayyapet (1)

Channavajhala: Krishna, Vijayawada (3); West Godavari, Chintalapudi (1)

Chebrolu*: East Godavari, Irusumanda (1)

Cheruvu (= Cheruvu Mādhāwaram* in Khammam Dt. ?): Krishna, Masulipatam (3), Vuyyuru (1); West Godavari (1, with Chivukula as v. l.)

Chilukuri: Krishna, Gudiwada, Sayapuram (1)

Chivukula: Guntur, Vemuru (1); West Godavari, Siddhantam (1, with Chevuru as v.l.)

Chintalapati (cf. Rentachintala below and Chintalapudi in West Godavari): Guntur, Hassanabad (1), Narasaraopet (1)

Chitti: Krishna, Avanigadda (1); cf. no. 16

Dendukuri: Guntur, Guntur (4) and Tenali, Marispeta (1); Hyderabad, Secunderabad, Padmaraonagar, Chilkalguda (1); Krishna, Vijayawada (1) and ib. Buckinghampet (1) and ib. Krishnalanka (1); ? Kothapeta (1) and Pathapattabhipuram (1)

Dhulipali: Guntur, Guntur (2)

Duvvuri (v.l. Davuri, = Duvvūru*): all in East Godavari: Kapileswarapuram (1), Korumilli (2), Pulletikurru, Vakkalanka, Srirampuram (1)

Emani (v.l. Lemeni): East Godavari, Velicheru (1)

Gandikota: West Godavari, Tanuku (1)

Gangapuram: Mahabubnagar, Mahabubnagar (1)

Gangavajhala: Kurnool, Velugodu (1)

G(h)anti (cf. Oruganti): East Godavari, Amalapuram, Peruru (3); Krishna, Vijayawada (1), and ib., Purnanandampet (2); Sriakulam, Sriakulam (1); Vishakhapatnam: Waltair (1)

Gollapudi: Nellore, Nellore (1)

Hari: Khammam, Nela Kondapalli (1)

Hotha: Guntur, Saipalle (1)

Illinda: Warangal, Illinda (1)

Jonnalagadda: Krishna, Masulipatam (1)
 Kalakodimi: Khammam, Venusore (1)
 Kapilavayi (v.l. Kapalavayi): Krishna, Vijayawada (1), and Vuy-
 yuru, Kanakavalli (1)
 Kappagantu(la): All in Krishna: Gudiwada, Sayapuram (4), Jag-
 gayyapet (1), Vijayawada (1)
 Kasamajhala: Guntur, Gurajala (1)
 Kavuru: Khammam, Nela Kondapalli (1)
 Kistipadu (v.l. Kristipati): Kurnool, Velugodu (3)
 Kompalla: East Godavari, Amalapuram, Mukkamala (1)
 Kottapalli (v.l. Kothapalli): Krishna, Vijayawada (2) and ib.
 Krishnalanka (1), and ib. Satyanarayanapuram (2); West Goda-
 vari, Chinthalapudi, Pragadavaram (2)
 Kuchibotla: East Godavari, Tondaram (1)
 Kunapati: Guntur, Anantavaram (1)
 Kunapuli: Krishna, Vijayawada, Krishnalanka (1)
 Kuppa: Guntur, Kolluru (1)
 Lanka: East Godavari, ? (1)
 Lemeni (v.l. Emani): East Godavari, Velicheru (1)
 Mangipudi: Guntur, Kolluru (1)
 Madduri: Krishna, Nandigama, Juzzuru (5)
 Malladi: Hyderabad, Secunderabad, Malkajagiri (1); Krishna,
 Vijayawada, Governorpet (1)
 Mamil(l)apalli (= Porumāmilla*?): Kurnool, Nandikotkur, Paru-
 manchala (2)
 Medipuru: Mahabubnagar, Nagar Kurnool (1)
 Nandi Vanaparthi: Hyderabad, Ibrahimpatnam, Nandi Vanapar-
 thi (1)
 Nukala: East Godavari, Amalapuram (1), and ib. Peruru (1)
 Oruganti (cf. Ganti): East Godavari, Amalapuram (3)
 Palamooru: Mahabubnagar, Palamūru
 Pamidimarri: Krishna, Vijayawada, Purnanandampet (2)
 Pandyala: Khammam, Nela Kondapalli (4)
 Patangi: Kurnool, Churukucherla (1)
 Patluri (? = Potluri below): Hyderabad, Vikarabad, Patluru
 Patri: Kurnool, Nandikotkur, Mdituru (1)
 Pisipati (v.l. Peesapati): East Godavari, Iragavaram (1); West
 Godavari, Khandavalli (2)
 Ponnada: Guntur, Guntur (1)
 Ponnappalli: Guntur, Arupalli (1)
 Potluri (? = Patluri above): Karimnagar, Karimnagar (1)
 Pratapagiri*: Kurnool, Nandikotkur, Kurukunda (1)
 Pulleola: East Godavari, Pulletikurru, Vyaghreswaram (1)
 Pulyala: East Godavari, Narendarpuram (1)

Ramilla: East Godavari, Podagattapalli (1)
 Rampalli: Guntur, Ponnappalli (2)
 Rani: Krishna, Vijayawada (1)
 Rentachintala (v.l. Renduchintala, = Reṇṭāla*?) (cf. Chintala-
 pati): Krishna, Bandar (1), and Machilipatnam (1), and Masuli-
 patam (1), and Vijayawada, Krishnalanka (1)
 Sanndinam: Guntur, Bellamkoda, Cwotapapayapalem (1)
 Srilanka: East Godavari, Amalapuram, Nedumuru (1)
 Tangirala: Krishna, Vijayawada, Governorpet (1)
 Turuluri: West Godavari, Chintalapudi, Somavaram
 Upadhyajulu (v.l. Upadyula, Vupathayula): East Godavari, Amal-
 apuram (6) and ib. Bhoopayya Agraharam (2)
 Vempati: Guntur, Kolluru (1); Krishna, Vijayawada (1)
 Vemula: Mahabubnagar, Kalvakurthi, Vemula
 Vindamuri: Krishna, Nandigama, Juzzuru (1)
 Viruvinti: Kurnool, Nandikotkur, Kurukunda (2) and Churuku-
 cherla (1)
 Vishnub(h)otla: Guntur, Tenali (1) and ib. Ramalingeswarapet
 (3); Krishna, Vijayawada (5) and ib. Krishnalanka (1); West
 Godavari, Eragavaram (1)
 Yadavalli: All in Krishna: Machilipatnam, Godugupeta (1), Nan-
 digama (2), Pedana (1)
 Yenamandra (v.l. Yanamandra): Hyderabad, New Nallakunta (1),
 and Secunderabad (1); no. 205 (now in Madras, Tamil Nadu)

ASSAM

For an Aśvamedha in Assam by a Viṣṇuite, cf. K. G. Goswami, *IHQ* 31:129; for an animal sacrifice of the Vedic type in modern Assam, see B. K. Barua, *Cultural History of Assam* (Renou 1965, p. 73 § 13 n. 8).

BIHAR

The state of Bihar (Mithila) represented in old times one of the re-
 gions where Vedic religion and śāstric learning, including the Pūrva-
 Mīmāṃsā, flourished. Senāpati Puṣyamitra, the founder of the Śuṅga
 dynasty, performed two Aśvamedhas around 180 B.C., the first dated ones
 for a historical monarch (cf. *Ep. Ind.*, XX, 54, 57; see also Kālidāsa's
Mālavikāgnimitra, act 5; Narain 1957, pp. 9, 83); he was a follower of the
 Sāmaveda (Smith 1958³, p. 139, citing Haraprasad Sastri, J. and Proc.
ASB 1912, p. 287). Two inscriptions from the Śuṅga period record the
 performance of Aśvamedha and Vājapeya sacrifices (Smith 1958³ p. 138).

In the fourth and fifth centuries A.D. Samudragupta and Kumāragupta I struck gold coins commemorating the Aśvamedhas celebrated by them (Smith 1958³, pp. 166, 172; Renou 1965, p. 13; Sircar 1966, p. 34). Today hardly any trace of the ritualistic traditions can be found in these regions. At Darbhanga, however, at least one āhitāgni of the Mādhyandina school is reported to be living (= no. 206).

GUJARAT

In Gujarat a few āhitāgnis did exist in the last generation, particularly at Ahmedabad and Petlad. The present position of the śrauta tradition in this state, and others not included in our survey, is unknown.

KARNATAK (formerly MYSORE)

The Kadambas, who in the third to sixth centuries ruled the present North and South Kanara districts (cf. Smith 1958³, 214), are said to have performed Aśvamedhas in the Nilambur plates (*Ep. Ind.*, VIII, 148, cf. Kane 1941, II, 1: 70). The early Cālukya king Pulakeśin I (550–566), whose capital was Vātāpi, modern Bādāmi in the Bijapur Dt., performed Agni-ṣioma, Agnicayana, Vājapeya, Bahusuvarṇa (apparently = Bahuhiranya, i.e. Durāśa or Dūṇāśa Ekāha, cf. ĀpŚS 22.9.19 ff.), Pauṇḍarika, and Aśvamedha sacrifices (cf. Vaidyanathan 1938–1939, 263, citing Bombay Gazetteer, p. 344; Kane 1941, II, 1:70 mentions only the Aśvamedha and refers to *Ep. Ind.*, VI, 1, and IX, 100). Another Cālukya king of Vātāpi, Maṅgaliśa (ca. 597–610 A.D.) performed a Vājapeya (cf. Vājapeya 1955, 51 citing *IA*, III, 305).

We have almost fifty names for the Karnatak state. Some of these āhitāgnis belong to the Ṛgveda, others to the Baudhāyana and Āpastamba schools of the Taittiriya Yajurveda. The most conspicuous among them is Nārāyaṇa Dikṣita Marāṭhe, a Ṛgvedin of Vidyāraṇyapura near Sringeri (see no. 249 for his sacrifices) at which the Ādhvaryava and the Audgātra followed the Baudhāyana and Drāhyāyana schools respectively. In some of the Soma sacrifices in Karnatak, however, the Audgātra has been performed according to the Kauthuma school. Piṣṭapaśus have been employed at the Soma sacrifices in Udipi, the seat of Mādhva ācāryas. Gokarn, on the sea shore, is even at present a seat of śrauta learning and tradition.

Belgaum*

Belgaum*

207. Dhond Dikshita Kelkar. Agniṣṭoma (Hampi*, early 20th cent.) (7/1958.)

Jamkhandi*

208. Ganesh Dikshita Annegiri. Agniṣṭoma (early 20th cent.). (7/1958.)

Pachchapur*

209. Dada Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)

Ramdurg*

210. Balambhatta Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)
211. Ganesh Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)

Bidar*

Bidar*

212. Digambara Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)
213. Narayana Dikshita. (7/1958.)
214. Umakanta Dikshita. (7/1958.)

Bijapur*

Bādāmi*

215. Rama Dikshita Kavathekar. Sāgnicitya Vājapeya (Bagalkot* or Harihar, ca. 1920). (In Badami or elsewhere in Bijapur?) (cf. Vājapeya 1955, 51.) (7/1958.)
216. Rama Dikshita Veni. Agniṣṭoma; Sāgnicitya Aptoryāma (Shikarpur*, early 20th cent.). (7/1958.)

Chitradurga*

Chitradurga*

217. Kashinatha Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)

Dharwar*

Dharwar*

218. Mahadeva Dikshita Dandavate. Agniṣṭoma; Sāgnicitya Vājapeya; a Soma sacrifice with Āruṇaketuka Cayana (early 20th cent.). (7/1958.)

Hāngal*

219. Dattambhatta Joshi. Agniṣṭoma (early 20th cent.). (7/1958.)
220. Hangal Giridhar Shastri. Agniṣṭoma (1932); Sāgnicitya Aptoryāma (Tilvalli*, 1959). (7/1958.)
221. Hangal Virupaksha Shastri. Agniṣṭoma (early 20th cent.). (7/1958.)
222. Mahadeva Dikshita. Agniṣṭoma (early 20th cent.) (7/1958.)
223. Sitarama Dikshita. Agniṣṭoma; Sāgnicitya Aptoryāma (20th cent.) (7/1958.)

Kohir

224. Purushottama Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)

Lakshmiswar*

225. Shripada Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)
226. Vishvanatha Dikshita. Agniṣṭoma (early 20th cent.). (7/1958.)

Gulbarga*

Turamamdi

227. Panduranga Somayaji. Agniṣṭoma; Sāgnicitya Aptoryāma (early 20th cent.). (7/1958.)

Mysore*

Krishnarajnagar*

228. Doraiswami Dikshita. Agniṣṭoma (Somādhāna, 1963); Sāgnitya Aptoryāma (1964). (7/1958.)

Mysore*

229. K. A. Venkatakrishna. Agniṣṭoma (1925). (8/1976.)
230. Lakshminarayana Dikshita. Agniṣṭoma (1964). (8/1976.)

North Kanara*

Gokarn*

231. Balakrishna Joglekar. Agniṣṭoma (1945). (7/1958.)
232. Daivarata Subrahmanya. (7/1958.)
233. Damodar Dikshita Upadhyaya. Agniṣṭoma (Itgi, 1955). (7/1958.)
234. Krishnabhatta. Agniṣṭoma (1931). (7/1958.)
235. K. Venkateshopadhyaya. Agniṣṭoma; Sāgnicitya Aptoryāma (1930). (7/1958.)
236. Narayana Vishnu Sabhait. Agniṣṭoma (Salkode, 1947). (7/1958.)
237. Nilakantha Balkrishna Joglekar. Agniṣṭoma (1976).
238. Sitaram Yajneshwar Joglekar. Agniṣṭoma (1963). (8/1976.)
239. Subrahmanya Dikshita. Atyagniṣṭoma (1945); Sāgnicitya Aptoryāma (1946). (7/1958.)
240. Vishnu Sabhait. Agniṣṭoma; Sarvatomukha (1910). (7/1958.)

Raichur*

Narayanpet

241. Anna Dikshita. Agniṣṭoma; another Soma sacrifice (Mulgund*) (7/1958.)
242. Bhalachandra Somayaji. Agniṣṭoma (1954). (7/1958.)
243. Parashara Dikshita. Agniṣṭoma; Sarvatomukha with Cayana (1928). (7/1958.)

Shimoga (Shivamogga)*

Shikarpur*

244. Huchcha Dikshita. Agniṣṭoma (20th cent.). (8/1976.)

South Kanara*

Anegund*

245. Krishna Dikshita. Agniṣṭoma (1960). (8/1976.)

Kota*

246. Kota Padmanabha Dikshita. Agniṣṭoma (Melige, Shimoga, 1957) (7/1958.)
247. Kota Venkatakrishna Dikshita. Agniṣṭoma (1925). (7/1958.)
248. Kota Yajnanarayana Dikshita. Agniṣṭoma (Melige, Shimoga, 1956); Sāgnicitya Aptoryāma (Shirnalli, Shimoga, 1958). (7/1958.)

Sringeri*: Vidyāraṇyapuram*

249. Narayana Dikshita Marāṭhe, Ṛgvedin. Agniṣṭoma (1934); Atyagniṣṭoma (Nemmar, 1954); Atirātra (Kammardi, Shimoga, 1955); Sāgnicitya Aptoryāma (1960); Vājapeya (Durg, Harihareshwar, 1961; employed clarified butter instead of animals). (7/1958.)

Udipi*

250. Sitaramacharya. Agniṣṭoma (1952); Atyagniṣṭoma (Shirur*, 1958). (7/1958.)
251. Subrahmanya Dikshita, Mādhva Vaiṣṇavite. Agniṣṭoma (1961). (8/1976.)

Udipi*: Belladi P.O.: Vanduru

252. Dikshita Ramakrishna Adiga. Agniṣṭoma (1930); Sāgnicitya Aptoryāma (Kotambailu, 1957 or 1959; employed clarified butter instead of animals). (8/1976.)

Udipi*: Parampalli

253. Krishna Aithal. (7/1958.)

KERALA

The śrauta tradition of Kerala is dealt with extensively elsewhere in this book; yet the following brief remarks and the lists of the āhitāgnis may be justified in the present context. In former times, Aśvamedhas were performed in Kerala as well (cf. Kunjunni Raja 1958, p. 170), and more than a thousand years ago the Nambudiri brahmin Bhavatrāta, a contemporary of Daṇḍin, composed commentaries that attest to his extraordinary acquaintance with the entire range of śrauta and gṛhya rituals on the Kalpasūtras of the Jaiminīyas and the Kauṣītaki Gṛhyasūtra. A similar ancient commentary written in Kerala is that by Udaya on the Kauṣītaki Brāhmaṇa, published by E. R. Sreekrishna Sarma (1976). Yet one must point out in this connection that Raghavan (1962, pp. 2 ff., without giving his source) refers to a tradition according to which Bhavatrāta's "family migrated from Tittāguḍi (Vasiṣṭha Kuṭi) in South Arcot to Kerala." An indication of his non-Kerala, but rather Kannaḍa than Tamil, origin might be seen in the

fact that it is the *Gṛhyasūtra* of the *Hiraṇyakeśins* upon which *Bhavatrāta*'s father *Mātrdatta* commented. The *Yajurveda* is represented in Kerala only by two highly archaic schools, that of the *Baudhāyanins* (more than 90 percent) and that of the *Vādhūlakas*, which is restricted to Kerala (cf. Staal 1961, pp. 62 ff.). The *R̥gveda* is found in Kerala in two schools, the *Āśvalāyana* and the *Kauṣitaki* (Staal 1961, p. 53), but the *Sāmaveda* only in the rare *Jaiminiya śākhā*, which otherwise prevails in Tamil Nadu alone, though in a different form (cf. Staal 1961, p. 64 ff.; Parpola 1973). The *śrauta* tradition of Kerala thus is fairly isolated. As far as the *Soma* sacrifices are concerned, their repertoire is nowadays confined to the *Agniṣṭoma* and the *Sāgnicitya Atirātra*, which entitle one to the titles *Somayaji*(pad) and *Akkitiri*(pad), respectively. According to *Erkkara Raman Nambudiri* (below, no. 294), somewhere over 120 *Agniṣṭomas* and 5 *Atirātras* have been performed in Kerala between 1911 and 1970 (inclusive). *Erkkara Raman Nambudiri* (born in 1898) has personally taken part in more than 65 of them in various capacities (at times as a sacrificing priest), though as a bachelor he has not himself had one performed on his behalf. He is undoubtedly the foremost *śrauta* expert in Kerala, where the *yāgas* are performed partly according to traditional manuals and partly according to the oral instructions of such experienced persons. See also below, pages 252–255.

Below we shall give the member lists of three *sabhāyogas* of Kerala *āhitāgnis*, provided by Dr. V. R. Lakshmikanta Sarma; they are followed by a few names of experienced priests, and then a few *āhitāgnis* belonging to the distinct Tamil *Aiyar* tradition of the *Palghat* region.

Somayajipad members, *Sukhapuram* (*Sukapuram*) *gramam Sabhayogam* (the member list is dated 7th *makaram* 1144 = 1968)

*Chelakkara**: *Killimangalam P.O.*

254. *Pallisseri Manakkal Narayanan Somayajipad*

*Cherupulacheri**: *Karalmanna P.O.*

255. *Karalmanna Kunnath Manakkal Narayanan Somayajipad*

256. *Kizhenarappatta Manakkal Vasudevan Somayajipad*

257. *Thekkumparambath Manakkal Subramanian Somayajipad*

258. *Koyithadi Manakkal Parameswaran Somayajipad*

*Cherupulacheri**: *Valambirimangalam P.O.*

259. *Kappiyur Eledath Manakkal Sankaranarayanan Somayajipad*

*Cheruthuruthy**: *Panjali P.O.*

260. *Nellikkat Mamannu Manakkal Neelakandan Akkithiripad*

261. *Vayakkakara Manakkal Neelakandan Somayajipad*

*Edappāl P.O.**

262. *Narayanamangalathu Manakkal Akkiranman Somayajipad*

263. *Narayanamangalathu Manakkal Vasudevan Somayajipad*

*Edappāl**: *Alangod P.O.*

264. *Valiyavukkuzhi Manakkal Divakaram Somayajipad*

*Edappāl**: *Nannamukku P.O.*

265. *Mangalathari Manakkal Narayanan Somayajipad*
*Kumaranallur** *P.O.*

266. *Kizhakke Kundulli Manakkal Raman Somayajipad*
*Kumaranallur**: *Mundoor P.O.*

267. *Kavapra Kandayur (Kāppara Kaṇayūr?) Manakkal Sankaran Somayajipad*

268. *Kavapra Marath Manakkal Narayanan Somayajipad*

269. *Kavapra Marath Manakkal Sankaranarayanan Somayajipad*
*Palghat Dt.**: *Koottanad P.O.*

270. *Pazhayath Sasthra Sarman Adithiripad*

*Palghat Dt.**: *Koottanad*: *Thekke Vavanoor P.O.*

271. *Kizhuprakkat Manakkal Neelakandan Somayajipad*

272. *Podakuzhi Manakkal Raman Somayajipad*

*Pazhanj**: *Karikkad*

273. *Bhatti Thekkedath Manakkal Vasudevan Somayajipad*

*Shoranur**: *Mannanoor P.O.*

274. *Pothayath Narayana Mangalattu Manakkal Bhavadasan Somayajipad*

*Thiruvegappura** *P.O.*

275. *Vadakke Cherumukku Manakkal Vallabhan Somayajipad*

*Thiruvegappura**: *Adappalam P.O.*

276. *Vadakke Cherumukku Manakkal C. V. Vallabhan Somayajipad*

277. *Vadakke Cherumukku Manakkal Cherla Vallabhan Somayajipad*

278. *Vadakke Cherumukku Manakkal Neelakandan Somayajipad*
(now: *Akkithiripad*)

279. *Vadakke Cherumukku Manakkal Vasudevan Akkithiripad*

*Thiruvegappura**: *Chembra P.O.*

280. *Bhattiputhillath Ravi Somayajipad*

*Vadakkancheri**: *Attoor P.O.*

281. *Puthillath Mundayur Manakkal Vasudevan Somayajipad*

Members of the *Perumanam gramam Sabhayogam* (1968?)

*Mannampetta**: *Thottara*

282. *Madambi Jathavedan Adithiripad*

*Mayannur**: *Cherunkara*

283. *Mundanat Sankaran Adithiripad*

*Palghat**: *Kannanore Thirthala*

284. *Edamana Parameswaran Adithiripad*

*Shoranur**: *Kavalappara*

285. *Moori Sredharan Somayajipad*

*Trichur**: *Aarattupuzha P.O.*

286. *Moolayil Perumpadappu Krishnan Somayajipad*

*Trichur**: *Cherpu*

287. *Keezhillam Jathavedan Adithiripad*

Members of the Irinjalakuda Sabhayogam (7th makaram 1144 = 1968)

Trichur*: Kattoor P.O.

288. Koottampilli Vasudevan Ahithagni

Trichur*: Manalur P.O.

289. Vadakkedath Thamarappilli Damodaran Ahithagni

Trichur*: Nandipulam P.O.

290. Chirangat Mallisseri Sankaran Ahithagni

291. Vadakkedath Mallisseri Haridathan Ahithagni

Trichur*: Pudukkad: Nandikkara P.O.

292. Nandikkara Naduvam Somayajipad

Trichur*: Pudukkad: Muthrathikkara P.O.

293. Kizhikkiniyedath Ravi Ahithagni

Other Nambudiris

Malappuram*: Nannam Mukku: Mukkuthala P.O.

294. Erkkara Manakkal Raman Nambudiri (born 1898), Ṛgvedin of the Kauṣītaka śākhā and Tirunāvāya school (he has recited the entire Kauṣītaki Brāhmaṇa for E. R. Sreekrishna Sarma's edition, 1968) is the foremost śrauta expert of Kerala (see the introduction to Kerala, above). Son of 295. (9/1974.)

295. Erkkara Manakkal Vasudevan Somayajipad, father and teacher (in śrauta) of 294. (9/1974.)

Cheruthuruthy*: Panjal* P.O.

296-298. Muṭṭattukkāṭṭu Māmaṇṇu Manakkaḷ Itti Ravi Nambūdiri, Jaiminiya, the foremost authority on the Sāmaveda in Kerala, has performed the Audgātra in many sacrifices. His grandfather's father performed an Atirātra, and his father an Agni-ṣṭoma. (10/1971.)

299-300. The father of no. 260 (who performed an Atirātra in Panjal in 1953) celebrated an Agniṣṭoma in 1918, while his grandfather performed an Atirātra (with Agnicayana). (11/1971.)

Aiyar āhitāgnis of the Palghat Dt.

Ālattūr*: Noorani (Nūrani)

301. N. Somasundara Dikshitar Somayaji has published in Sanskrit a description of the Vājapeya (Madras, n.d.), lives now in Kumbhakonam, Thanjavur Dt., Tamilnadu. Agniṣṭoma. (13/1972.)

Kalpati* (Kalappatti) P.O.: Vedakkenturai

302. Shalappa Dikshitar

303. Somasundara Dikshitar

MADHYA PRADESH

The Vākāṭaka king Pravarasena I, who in the fourth century controlled Madhya Pradesh and set up a feudatory kingdom under his son in the

Western Deccan (cf. Smith 1958³, p. 214), performed Agniṣṭoma, Aptoryāma, Jyotiṣṭoma, Brhaspatisava, Sādyaskra, Ukthya, Śoḍaśin, Atirātra, Vājapeya, and no less than four Aśvamedhas (*Ep. Ind.* III, 258 and Gupta Inscriptions no. 55, cf. Kane 1941, II, 2: 70; Sircar in Majumdar and Pusalker, eds. 1953², II, 220). The Bhāraśiva-Nāgas of Padmāvatī in Madhya Pradesh are in the Vākāṭaka copper plates said to have performed ten Aśvamedhas, all the while having on their persons the emblem of Śiva, not the *yūpa* (cf. *Ep. Ind.*, III, 258-260; Kane, l.c., Renou 1965, p. 13). We have just one modern reference from this state:

Gwalior*

304. Vināyak Śāstrī Gāḍgil, RV. Performed a Sāgnicitya Aptoryāma about 1890-1895 at the Bhairav Bāvṛī in Vārāṇasī (cf. after no. 547). (15/1957.)

MAHARASHTRA

Epigraphic evidence relating to śrauta tradition in Maharashtra seems to be relatively scarce. In an inscription of 757 A.D., the Cālukya emperor Pulakeśin, whose capital probably was at or near Nāsik (cf. Smith 1958³, p. 215), is stated to have been purified by his bath at an Aśvamedha (*Ep. Carn.*, X, Kolar no. 63; cf. Kane 1941, II, 2: 1238). Nevertheless, we have records of some forty āhitāgnis from this state in recent times; they have belonged to the Āśvalāyana, Satyāśāḍha and Mādhyandina schools. (For the rare Mānava school, see below no. 319.) The Ṛgvedins have generally followed the Baudhāyana and less frequently the Āpastamba school for the ādhvaryava. The sacrificers belonging to the Satyāśāḍha school mostly have adopted yājuṣa-hautra, and even in their Soma sacrifices, the hautra has contained the Taittiriya elements, being in many cases performed by followers of the Satyāśāḍha school itself (cf. below, pp. 248 f.). In the sacrifices performed by the Mādhyandinas, Śāṅkhāyana hautra has been adopted. The audgātra has invariably been performed according to the Kauthumas. Among the āhitāgnis of Maharashtra, the largest number of Soma sacrifices has been performed by Shankara Dikshita Nātu, son of Vasudeva Dikshita Nātu, a Satyāśāḍhi of Sangli; the only man in the whole of India in the present and last centuries who seems to be able to compete with his impressive achievements (see below, no. 329) is the above-mentioned Āndhra sacrificer, Rentachintala Venkatachala Yajulu (no. 150). The two sacrifices performed by Shankara Dikshita Nātu in 1951 took place at Wai, Satara Dt., and all the others at Sangli. This provided a unique opportunity for a large number of vaidikas to become trained in the various priestly offices, including those of the hotā and his assistants.

Akola*

Vashim (Bāsim)*

305. Mahadeva Sambasastri Purankar, Mādhyandina.

Buldana*

Khamgaon*

306. Prabhakar Lakshman Vaidya, Mādhyandina.

Dhūlia*

Dhūlia*

307. Ganesh Dikshita. Agniṣṭoma (early 20th cent.).

Goa*

Mhapsa*

308. Mahadeva Dikshita H. Apte, Satyāśāḍha. Agniṣṭoma (Akalkot*, Maharashtra, 1969; clarified butter was employed instead of animals).

Kolhapur*

Ichalkaranji*

309. Gulavani.

310. Shridhar Balkrishna Joshi Altekhar. Agniṣṭoma (Karād*, Satara Dt., 1927); Sāgnicitya Aptoryāma (Sangam Mahuli, Satara 1940).

Kolhāpur*

311. Ganesh Dikshita Paranjpe. Agniṣṭoma; Sāgnicitya Aptoryāma (early 20th cent.).

312. Moreswar Joshi. Agniṣṭoma (Poona* 1968).

Kurundwad*

313. Jamitre. Agniṣṭoma (early 20th cent.).

314. Oka Dikshita. Agniṣṭoma (early 20th cent.).

Nrsimhawadi*

315. Damodar Dikshita Jere. Agniṣṭoma (Sangli* 1928).

316. Shankar Shastri Jere. Agniṣṭoma (Wai*, Satara, 1924); Sāgnicitya Aptoryāma (Kallol, Belgaum, 1923).

Nagpur*

Nagpur*

317. Narahari Shrauti. Agniṣṭoma (1927).

Nasik*

Nasik*

318. Hari Shankar Joshi Ambekar, Mādhyandina. Agniṣṭoma (Amraoti*, 1958); Sāgnicitya Atyagniṣṭoma (1959; animals were not offered); Vājapeya (Poona*, 1959).

319. N. N., Mānava (early 20th cent.). Though exact details are wanting, it seems that Soma sacrifices have been performed according to the rare Maitrāyaṇī school until recently around Nasik.

Poona*

Bhor*

320. Baba Dikshita Hoshing.

Kelavde*

321. Vishnu Dikshita Bhide. Agniṣṭoma (1912; yājuṣahautra).

322. Vishvanath Narayan Bhide, Satyāśāḍha. Agniṣṭoma (Poona*, 1958; yājuṣahautra).

Poona*

323. Dattatreya Ramachandra Kinjavdekar. Agniṣṭoma (Goa*, 1912); Sāgnicitya Sarvapṛṣṭha Aptoryāma (Kurundwad*, Kolhapur, 1935; a booklet with a list of śrauta performances was published on the occasion by the Managing Committee, cf. Kashikar 1958, p. 64).

324. Dattatreya Shastri Tambe.

325. Shankar Ramachandra Rajawade, Āśvalāyana. Chose an adhvaryu of the Satyāśāḍha school instead of one belonging to the Baudhāyana or Āpastamba school (20th cent.); see p. 234.

Ratnagiri*

Golap*

326. Ram Dikshita Bapat, Satyāśāḍha. Agniṣṭoma (Satara*, 1903); Sāgnicitya Atyagniṣṭoma (Poona*, 1904); Sāgnicitya Aptoryāma (1910). The hautra elements of the Taittiriya Veda were observed in these sacrifices; see pp. 248f.

Rājāpur*: Dongar

327. Gopalbhatta Gokhale, Satyāśāḍha. Agniṣṭoma (Ratnagiri*, 1935; the hautra elements of the Taittiriya Veda were observed).

Sangli*

Sangli*

328. Rajaram V. Apte, Satyāśāḍha.

329. Shankara Vasudeva Dikshita Natu, Satyāśāḍha. Agniṣṭoma (1934); Sāgnicitya Aptoryāma (1936); Vājapeya (1939); Atyagniṣṭoma with Dviśāhasra Cayana (1940); Ukthya (1942); Ṣoḍaśī (1942); Atirātra with Triśāhasra Cayana (1942); Pauṇḍarika (1943); Sarvatomukha (1943); Agniṣṭut with Kāthaka Cayana (Wai*, Satara, 1951); Bṛhaspatisava (Wai*, Satara, 1951). In all these sacrifices (on which cf. also above, p. 227).

the hautra was performed by followers of the Satyāśāḍha school. Son of 332.

330. Shripad Balambhatta Chhatre.

331. Tilak.

332. Vasudeva Dikshita Natu, Satyāśāḍha, father of no. 329.

*Satara**

Pachawad*

333. Ananta Dikshita Bapat Panchavalkar, Satyāśāḍha, grandfather of no. 334. Agniṣṭoma; Vājapeya (Alibag, 1905). Adopted ṛgghautra. (Cf. Vājapeya 1955: 51.)

334. Dhuṇḍhirāja Dikshita Bapat, Satyāśāḍha; died on February 13, 1956 at the age of 74 (cf. *Śrautakośa* I; *E.S.*, p. 37). Cāturmāsya; Agniṣṭoma (Aundh*, N. Satara, 1925, under the patronage of the Raja of Aundh); Sāgnicitya Sarvapṛṣṭha Aptoryāma (Indore*, Madhya Pradesh, 1930); Vājapeya (Poona*, 1955; for this sacrifice cf. above, p. 200). Ṛghautra according to the Āśvalāyana school was adopted, and clarified butter was employed instead of animals in the two latter sacrifices.

*Sātāra**

335. Ananta Nilakantha Joshi; deceased.

336. Ramchandra Ananta Joshi; living.

*Wai**

337. Kashinatha Dikshita Karandhikar, Satyāśāḍha. Agniṣṭoma (Pachwad*, 1872; the hautra elements in the Taittiriya Veda were insisted upon).

338. Kashinatha Shastri Lele, Satyāśāḍha. Agniṣṭoma (1913; hautra elements in the Taittiriya Veda observed).

339. Nilakantha Lele, Satyāśāḍha. Agniṣṭoma (1949; the hautra was performed by Satyāśāḍhins).

340. Shankar Dikshita Gokhale, Satyāśāḍha. Agniṣṭoma (the hautra elements in the Taittiriya Veda were observed).

*Sholapur**

Pandharpur*

341. Balacharya Varkhedkar, Mādhva Vaiṣṇavite. Agniṣṭoma (Somādhāna, 1967); Sāgnicitya Aptoryāma (1975; piṣṭapaśu).

342. Nrsimhacharya Varkhedkar, Mādhva Vaiṣṇavite. Agniṣṭoma (Gaya, 1958; piṣṭapaśu).

343. Pradyumnacharya Varkhedkar, Mādhva Vaiṣṇavite. Sāgnicitya Paunḍarika (Hyderabad, 1962). (Resides in Hyderabad; entered here because he apparently originally hails from Pandharpur.)

NEPAL

According to personal communications of Michael Witzel (1974–1975), there are two groups of brahmins in Nepal who perform Vedic rituals. The Newari brahmins came from India in medieval times (according to their own tradition some 800 years ago), and are fully integrated into Newari society, speaking Newari. With the help of the Japanese Television, Witzel has been engaged in filming Newari rituals including “bratabandha” (i.e., Upanayana), Śrāddha, and marriage, as well as the Agnihotra, which is being performed by one single Newar brahmin only (no. 344), and which is much influenced by Tantric worship. The Agnihotra is being performed daily for the king of Nepal, as well, by a Nepali brahmin (no. 345) according to his family tradition (he had never seen the Kātyāyana-Śrautasūtra as such): his family has been performing this duty for about 200 years. The Nepali brahmins, who speak Nepali, came originally from Kumaun and all belong to the Mādhyandina school. Besides the Agnihotra, only the Darśapūrṇamāsa is performed of the śrauta sacrifices. At the end of the 19th century, however, āhitāgni paṇḍit Śiromaṇi Śāstrī (no. 346), the guru of the King of Nepal in Kathmandu, is known to have performed two Somayāgas in Vārāṇasī: first an Atyagniṣṭoma, and then, spending two lakhs of rupees, a Sāgnicitya Sarvapṛṣṭhāptoryāma. The site where these sacrifices took place was the Bauliyā Bāg situated at Rām Kaṭorā (cf. also no. 545).

RAJASTHAN

The inscription found at Ghosunḍi-Hathibala, Chitorgarh Dt., Rajasthan, and dated to about the second half of the 1st century B.C. (cf. Sircar 1965, p. 42), refers to king Gājāyana Sarvatrāta, a Bhāgavata, as a performer of an Aśvamedha celebrated not in honor of Indra but of Saṃkarṣaṇa and Vāsudeva (*Ep. Ind.*, XVI, 25, and XXII, 198; cf. Kane 1941, II, 1: 70, and Renou 1965, p. 13).

From recent times, we have references only to royal sacrificers:

Jaipur*

347. Rājā Mān Sinh, king of Jaipur. Had the Rājasūya performed in Vārāṇasī in the 17th century (see no. 542).

348. Raja Savāi (Sewai) Jayasingh, king of Amber (= Jaipur). Aśvamedha (first half of the 18th cent.). (Cf. Īśvara-vilāsakāvya of Kṛṣṇakavi in the Deccan College manuscript no. 273 of 1884–1886; P. K. Gode in *Poona Orientalist*, 2, 166–180, and Kane 1941, II, 2: 1239; more literature in Renou 1965, p. 73 § 13 n. 8.)

Kishengarh*

349. Maharaja of Kishengarh. Agniṣṭoma (early 20th cent.) (15/1957.)

Shahapura*

350. Maharaja of Shahapura. Āhitāgni. (early 20th cent.)

TAMIL NADU

The Old Tamil poems of the 1st centuries A.D. contain many references to Vedic sacrifices. Although the religion that is in the foreground in these texts still predominantly represents the ancient Dravidian tradition (cf. Hart 1975, pp. 21–50), the brahminic rites of the North had already been introduced to South India (cf. Filliozat 1968; Hart 1975, pp. 51–56). For instance, the Pāṇḍya king Mutu-kuṭumi-peru Vaḷuti, who is referred to simply as Kuṭumi both in Puṛaṇāṇūru (6,26; 9,8; etc.) and in an inscription of Vēlvikkuṭi (= “village of sacrifice,” *Ep. Ind.*, XVII, 291–309, no. 16), has the epithet *pal-yākacālai* ‘having many sacrificial halls’ (Puṛam 64, col.). Puṛam 224, 9 speaks of *veta-vēlvi* ‘Vedic sacrifice’, and Puṛam 2 of the three fires. A specific rite is met with in the epithet of the Cōḷa king Perunaṛkiḷḷi, *irācacūyavēṭṭa* ‘who has performed the sacrifice of rājasūya’. This tradition can be traced to slightly younger texts; thus the Cilappatikāram (ca. 200 A.D.) mentions *vēlvi cālai* ‘yāgaśālā’, and the Paripāṭal (ca. 5th cent.) *vēlvi mutalvan* ‘lord of sacrifice (Indra)’ and *vēlvi-p-pākam* ‘sacrificial portion’ (5, 31; 5, 26 ff.). The Pallava king Śivaskandavarman of Kāñcīpuram, who reigned in the first half of the 4th century A.D. (cf. Sathianathaier in Majumdar, ed., 1954, III, 282), performed the Agniṣṭoma, Vājapeya and Aśvamedha sacrifices (*Ep. Ind.*, I, 5; cf. Kane 1941, II, 1: 69).

It seems that the śrauta tradition of present-day Tamil Nadu has largely spread from the Tanjur district, and that its flourishing there is largely due to the patronage of the Nayak of the 15th century, and especially to the spiritual mentor and minister of Sevvappa Nayak, Achuta Nayak, and Raghunatha Nayak, the chancellor Govinda Dikṣitar. He himself performed daily the Agnihotra and many Soma sacrifices, including the Sarvatomukha, and established in 1542 the Raja Veda Pāṭhaśālā in Kumbhakonam for the study of Ṛg-, Yajur-, and Sāmaveda; this institution, which according to the tradition stands on the very site of Govinda Dikṣitar’s sacrifices, is still functioning. Govinda Dikṣitar also founded numerous villages and donated them to brahmins; among these is Kandamangalam, from which we have records of śrauta traditions that still survive. Govinda Dikṣitar, a Ṛgvedin of the Āśvalāyana school, had seven sons, of whom the eldest, Yagnanarayana Dikṣitar, performed the Ādhvaryava at the Āpta-vājapeya conducted by his father, and, to judge from his name, was himself also a Soma sacrificer. A younger son, Venkata Makhin, was, like his father and eldest brother, also a famous writer on the śāstras and on music whose works include the

Vārttika-bharaṇam on Mīmāṃsā. (For further details see the booklet “Sri Govinda Dikshitar,” published by the Rāja Veda Pāṭhaśālā, Kumbhakonam, n.d.)

The Vedic traditions thus resuscitated could continue in peace under the tranquil rule of the Bhonsala dynasty at Thanjavur. The ministers of the kings Shahaji and Sarfoji also themselves performed many sacrifices in the 18th century. The concentration of the Tamil śrauta tradition in this district is indeed conspicuous: we have records of some eighty āhitāgnis there, and most of them are still living. A big center of Vedic ritual in this nucleus has been the village Sengalipuram, as may be seen from our list. S. Anantarama Dikshitar, who comes from this village, has greatly propagated the cause of śrauta religion in this century, and has been awarded the title Upanyāsacakravartin. Most of the śrauta performances in the Thanjavur district and elsewhere have been ably guided by Nellicheri Ramanatha Śrautigaḷ, while T. S. Narayanasami Sastrigaḷ, a Sāmavedin of Tippiirajapuram, has most sacrifices to his credit as the yajamāna (see no. 435). Another major center of śrauta tradition has been Kallidaikuruchi in the Tirunelveli district: it once had eighteen āhitāgnis, most of whom had performed Soma sacrifices. Here the yājuṣa-hautra has been adopted for pre-Soma rituals. The schools followed in the śrauta rituals of Tamil Nadu are Āpastamba of the Yajurveda, Āśvalāyana of the Ṛgveda, and Drāhyāyana and Kauthuma of the Sāmaveda.

Chingleput (Ceṅkaḷunīrppattu)*

Madras* (cf. also above, no. 205)

351. Sambasiva Deekshithar, YV. Ādhāna. (13/1972.)

352. Subramania Deekshithar, YV. Agniṣṭoma. (13/1972.)

Tirukkalukkunṇam*

353. Subrahmanya Dikshita. (14/1958.)

Madurai*

Madurai*

354. T. Appadurai Dikshitar. Many Soma sacrifices with Cayanas up to Vājapeya with Triṣāhasra Cayana (1923).

Ramnad (Rāmanāthapuram)*

Devakottai*

355. N. N. Many Soma sacrifices with Cayana; Vājapeya (Devakottai, 1936).

S(h)ivaganga*: Kaliarkoil

356. Kaleeswara Dikshitar.

Thanjavur (Tañcāvūr, Tanjore)*

Ariyur

357. Srinivasier. (14/1958.)

Ayyampettai* P.O.: Nellicheri (Ayyampettai on the Kumbhakonam-Thanjavur route was built by Govinda Dikṣitar in the 15th cent.)

358. N. Jambunatha Srowthigal, YV. Agniṣṭoma (Mayūram, 1958). (13 + /1972.)

359. N. Jayarama Śrauti/Deekshithar, YV. Agniṣṭoma (Mayūram, 1958). (13 + /1972.)

360. N. Ramanatha Śrautigal, expert in ādhvaryava and hautra, has directed most of the performances in the Thanjavur Dt. and elsewhere in Tamil Nadu; has been granted the title *śrautavidyāsudhākara*. (14/1958.)

361. Vaidyanatha Dikshitar. (14/1958.)

362. Yagneswara Deekshithar, YV. Agniṣṭoma. (13/1972.)

Gangadharapuram (near Swamimalai in the vicinity of Kumbhakonam)

363. Swaminatha Dikshitar. (14/1958.)

364. Venkatarama Deekshithar, YV. Agniṣṭoma. (13/1972.)

Kandamangalam (built by Govinda Dikṣitar in the 15th cent.)

365. Subramania Deekshithar, YV. Agniṣṭoma.

Kodavāsāl*: Sengalipuram*

366. Adhyarapathi Deekshithar, YV. Agniṣṭoma. (13/1972.)

367. S. Anant(h)anarayana(n) Deekshithar, YV. Agniṣṭoma (1950). (13 + /1972.)

368. S. Anant(h)arama Deekshithar alias Ambi, YV, Upanyāsa-cakravartin (see above, p. 233). Agniṣṭoma (1950). (13 + /1972.)

369. S. Anjaneya Deekshithar, YV. Agniṣṭoma. (13 + /1972.)

370. S. Ayya Deekshithar, YV, continues a long śrauta tradition. Agniṣṭoma; Sāgnicitya Aptoryāma. (13 + /1972.)

371. Krishnamurthi Deekshithar, YV. Agniṣṭoma. (13/1972.)

372. Mani Deekshithar, YV. Agniṣṭoma. (13/1972.)

373. Narayanaswamy Deekshithar, YV. Agniṣṭoma. (13/1972.)

374. Nataraja Deekshithar, YV. Agniṣṭoma. (13/1972.)

375. S. Pundarikaksha Dikshitar, SV. (14/1958.)

376. S. Subburama Dikshitar. (14/1958.)

377. Subramania Deekshithar, YV. Agniṣṭoma. (13/1972.)

378. S. Sundaresha Shastrigal. (14/1958.)

379. Swaminatha Deekshithar, YV. Agniṣṭoma. (13/1972.)

380. S. Venkatesha Dikshitar. Agniṣṭoma; Sāgnicitya Aptoryāma; Vājapeya (Veppathur, 1946). (14/1958.)

381. Yagnanarayana Deekshithar, YV. Agniṣṭoma. (13/1972.)

Kumbhakonam* (cf. also no. 301)

382. Agnihotram Tatachariar, Vaiṣṇavite; recently deceased.

383. Dr. V. R. Lakshmikanta Sarma Deekshithar, YV; living. (Our informant no. 13; prepares an edition of Tālavṛnta-nivāsin's alias Āṇḍapiḷḷai's Prayogavṛtti on the Āpastamba Śrautasūtra; has taken part in many sacrifices). Agniṣṭoma. (13 + /1972.)

384. S. Narayana Dikshitar. Agniṣṭoma; Sāgnicitya Aptoryāma; Vājapeya (1944). (14/1958.)

385. Ramachandra Deekshithar, YV. Agniṣṭoma. (13 + /1972.)

386. Ramanatha Deekshithar alias Kuppuswami, YV. Agniṣṭoma. (13 + /1972.)

387. Ramanuja Thathacharya Deekshithar, YV. Agniṣṭoma. (13/1972.)

388. Srinivasa Thathacharyar, YV. Agniṣṭoma. (13/1972.)

389. Sund(a)ra Thathacharya Deekshithar, YV. Agniṣṭoma. (13/1972.)

390. N. N. Ukthya with Dviśāhasra Cayana (Kumbhakonam, during eight days in June, 1972). (13/1972.)

Kunnam* (on the Coleroon bank)

391. Balakumara Dikshitar. (14/1958.)

392. Balarama Deekshithar, YV. Agniṣṭoma. (13/1972.)

393. Krishnamurthi Deekshithar, YV. Agniṣṭoma. (13 + /1972.)

394. V. Srinivasar. Agniṣṭoma. (1957). (14/1958.)

395. Sund(a)rarama Deekshithar, YV. Agniṣṭoma. (13/1972.)

396. Yagnarama Deekshithar, YV. Agniṣṭoma. (13/1972.)

Mannārgudi*

397. Gopala Dikshitar. Agniṣṭoma; Sāgnicitya Aptoryāma (1956). (14/1958.)

398. Ramamurthy Dikshitar. (14/1958.)

Marur*

399. Raghawa Dikshitar; deceased. (14/1958.)

Mayūram (Māyavaram)*

400. Annas(w)amy Deekshithar, YV. Agniṣṭoma. (13 + /1972.)

401. Gopala Deekshithar, RV. Agniṣṭoma. (13/1972.)

402. Rama Deekshithar, RV. Agniṣṭoma. (13/1972.)

Mayūram*: Malliyam: Asikkadu

403. Nidur Dikshitar. Soma sacrifices with Cayanas. (14/1958.)

Nannilam*

404. Sethurama Deekshithar, YV. Agniṣṭoma. (13/1972.)

Nannilam*: Palur

405. Appathurai Dikshitar. (14/1958.)

Nannilam*: Vaḍaguḍi

406. Narayana Deekshithar, YV. Agniṣṭoma; Ṣoḍaśi; Vājapeya. (13 + /1972.)

407. Raju Deekshithar, YV. Agniṣṭoma. (13/1972.)

408. Ramu/Raman Deekshithar, YV. Agniṣṭoma (1957). (13 + /1972.)

409. Srinivasa Deekshithar, YV. Agniṣṭoma. (13/1972.)

410. Subramania Deekshithar alias T(h)ambu Deekshithar. Agniṣṭoma. (13 + /1972.)
411. Swaminatha Deekshithar, YV. Agniṣṭoma. (13/1972.)
412. N. N. Atyagniṣṭoma (Vadagudi, March 1962; cf. Staal 1964, 608-609).
- Nannilam*: Srivanchiam (Srivanjiam)
413. P. K. Vaidyanatha Deekshithar, YV. Agniṣṭoma; Sāgnicitya Aptoryāma. (13 + /1972.)
- Nannilam*: Srivanchiam: Pūngulam P.O.
414. V. R. Gopala Iyer/Dikshitar, YV. Agniṣṭoma (1958). (13 + /1972.)
415. K. V. Thyagarajair. Agniṣṭoma (Pungulam, 1956). (14/1958.)
- Puththakaram
416. Varadaraja Bhattachar, YV. Agniṣṭoma. (13/1972.)
- Saliangalam*: Kalancheri
417. Rajamier. (14/1958.)
- Sammangudi
418. Kumara Dikshitar. (14/1958.)
419. Kumaraswamy Deekshithar, YV. Agniṣṭoma. (13/1972.)
420. Nageswara Deekshithar, YV. Agniṣṭoma. (13 + /1972.)
421. Sivaguru Deekshithar, YV. Agniṣṭoma. (13 + /1972.)
422. Yajnarama Dikshitar. (14/1958.)
- Shiyali*: Sattanathapuram
423. T. K. Aghora Shastrigal. (14/1958.)
- Simiḷi (Simizhi)
424. Gopala Vajapeyee/Dikshitar, YV. Agniṣṭoma; Āpta-Vājapeya (Tirukkarugavur, 1956). (13 + /1972.)
425. Rajendran Deekshithar, YV. Agniṣṭoma (1956). (13 + /1972.)
426. Yagna Deekshithar, YV. Agniṣṭoma. (13/1972.)
- T(h)andangorai
427. T. Appadurai Dikshitar. Agniṣṭoma; Soma sacrifice with Triṣāhasra Cayana (1920); Vājapeya (Madurai, 1923). (14/1958.)
428. Vaidyanathaswamy Dikshitar. (14/1958.)
- T(h)anjāvūr (Tañcāvūr, Tanjore)*
429. Ānandarāya, minister (dewan) of king Sarfoji of Thanjavur. Many sacrifices (18th cent.). (cf. Vājapeya 1955, p. 51.)
430. Govinda Dikshitar, RV (Āśvalāyana), chancellor of several Nāyak kings of Thanjavur (see above, pp. 217 f.). Agniṣṭoma; Sarvatomukha; Āpta-Vājapeya (Kumbhakonam, 15th cent.).
431. Sundaresa Deekshithar, YV. Agniṣṭoma. (13/1972.)
432. Tryambakarāya, minister of king Shahaji of Thanjavur. Many sacrifices (18th cent.). (cf. Vājapeya 1955, p. 51.)
433. Yagnanarayana Dikshitar, RV, expert in ādhvaryava. (14/1958.)

- T(h)ippirajapuram*
434. P. N. Ramamurthi Deekshithar, YV. Agniṣṭoma (1957). (13 + /1972.)
435. T. S. Narayanas(w)ami Deekshithar/Sastrigal, SV. Agniṣṭoma; Ukthya; Ṣoḍaśī; Sahasracayana; Sarvapṛṣṭha Aptoryāma; Dvisāhasracayana; Triṣāhasracayana; Brhaspati-sava; Sams-thā-vājapeya (Tirukkarugavur, June, 1955); Saumika Cāturmāsyā; Sarvatomukha; Sarvajit Mahāvratā (Puthagoram, 1956); Dvādaśāha (Vishnampettai, 1958). (Cf. Vājapeya 1955, pp. 51-52.) (13 + /1972.)
436. Venkatarama Srowthigal, SV. Agniṣṭoma. (13/1972.)
- T(h)irukkarugāvūr*
437. Vaidyanatha Deekshithar, YV. Ādhāna. (13/1972.)
- Tirunageswaram: Uppiliyappan Koil
438. Srinivasachari. (14/1958.)
- Tiruvaiyāru (on the Kāveri river)
439. Agnisvara Dikshitar. Agniṣṭoma (1941). (14/1958.)
440. Muthu Srowthigal/Dikshitar, YV. Agniṣṭoma (1958). (13 + /1972.)
441. Yajñesvara Dikshitar. (14/1958.)
- Tiruvengādu*
442. Aghora Deekshithar, YV. Agniṣṭoma. (13/1972.)
- Tiruvisanallūr (= Tiruvisalūr*)
443. S. Krishnamurthi Deekshithar, SV. Agniṣṭoma. (13 + /1972.)
- Udayalur
444. Sund(a)ra Deekshithar, YV. Agniṣṭoma. (13/1972.)
- Vikkirapandyam
445. Mahadeva Dikshitar. (14/1958.)
- Tirucchirappali* (Tiruccirāppaḷḷi, Trichinopoly, Trichi)*
- Karupattūr
446. Narayana Dikshitar. (14/1958.)
447. Radhakrishnier. (14/1958.)
- Krishnarājapuram
448. Sankara Dikshitar. (14/1958.)
449. Venkatarama Dikshitar. (14/1958.)
- Lalguḍi*: Angarai
450. A. K. Arunachala Dikshitar. Agniṣṭoma. (14/1958.)
451. Halasya(natha) Deekshithar, YV. Agniṣṭoma. (13 + /1972.)
452. A. R. (read A. K.?) Ramanatha Dikshitar, 17th generation of āhitāgnis. Agniṣṭoma (1960). (14/1958.)
- Mahārājapuram
453. Nagaswamy Dikshitar. (14/1958.)

Manakkāl*

454. Vaidyanatha Dikshitar. (14/1958.)

Pudukkoṭṭai*

455. Kalyana Dikshitar. (14/1958.)

456. Panchapagesha Dikshitar. (14/1958.)

457. N. N. Agniṣṭoma (Pudukkoṭṭai, "a few years" before 1950; cf. Renou 1950, p. 27). (14/1958.)

Tirukkāttuppaḷi (Tirkatpalli)*: Vishnampet(tai) (30 miles from Kumbhakonam)

458. Mahalinga Dikshitar. (14/1958.)

459. Natesha Dikshitar. (14/1958.)

460. Padmanabha Deekshithar, YV. Agniṣṭoma; Sarvapṛṣṭha Aptoryāma with Sāhasra Cayana. (13/1972.)

461. N. N. Kuru-vājapeya (Vishnampettai, 5-20.12.1972). (13/1972; participated in the yāga.)

Tirunelvēli (Tinnevely)*

Gopalasamudram*

462. Thiagaraja (Tyagaraja) Deekshithar, YV or SV (two conflicting reports). Agniṣṭoma. (13 + /1972.)

Kalakkadu* (SW of Tirunelvēli; according to another testimony a different Kalakkadu, ENE of Trivandrum in Kerala, is concerned.)

463. S(w)ami Deekshithar, YV. Agniṣṭoma. (13 + /1972.)

Kallidaikurichi*

464. Kailasa Deekshithar, YV. Agniṣṭoma. (14/1958.)

465. Sakthi Dikshitar. (14/1958.)

Kallidaikurichi*: Ekambarapuram

466. Krishna Dikshitar. (14/1958.)

467. Ramachandra Dikshitar. (14/1958.)

468. Varadaraja Srauti. (14/1958.)

Kallidaikurichi*: Ekambarapuram P. O.: Kallal

469. Hariharasubramanya Dikshitar. (14/1958.)

Kallidaikurichi*: Srivarahapuram

470. Satyavagisvara Dikshitar. (14/1958.)

Sundarapandiyapuram*

471. Krishna Deekshithar, YV. Agniṣṭoma. (13/1972.)

exact location unknown

Pallathur

472. N. N. Ādhāna (13/1972.)

473. Ramu Deekshithar, YV. Agniṣṭoma. (settled in Bombay, Maharashtra) (13/1972.)

474. Pranadharthihara (read Pradhana°?) Deekshithar, YV. Agni-

ṣṭoma; Sāhasracayana; Sarvapṛṣṭha Aptoryāma; Atirātra; Dvisāhasracayana; Ukthya. (13/1972.)

475. N. N. Agniṣṭoma (June 11, 1973). (13/1972.)

476. N. N. Śoḍaśī (June 8, 1973). (13/1972.)

UTTAR PRADESH

In his inscription at Ayodhyā (modern Ajodhya, Fyzabad Dt., U.P.), Dhanadeva, the sixth descendant of Puṣyamitra Śuṅga, says that he has performed an Aśvamedha; this would have happened in the late first century B.C. (cf. Sircar 1965, p. 42, and in Majumdar and Pusalker, eds. 1953², II, 173 f.). Though one must suppose that Uttar Pradesh was a seat of Vedic learning in ancient times, the tradition seems to have been fairly limited in historical times. The śrauta performances have been restricted, practically speaking, to Vārāṇasī and its immediate neighborhood, where during the last 130 years altogether nineteen Somayāgas have been performed in ten different localities, described below in detail according to the information provided by Śrī Viśvanāth Vāman Dev. In addition to the names of the yajamānas of these major sacrifices, performers of minor śrauta rites and persons who have officiated in the function of chief priests are listed below. The śrauta traditions of the sacred city go back to the very dawn of creation, when god Brahma is said to have performed the horse sacrifice ten times at the site of the present Daśāśvamedha Ghāt. The earliest historical yāga on record is the Rājasūya performed in Kāśī about 1650 on behalf of a mahārāja of Jaipur by Śyām Dikṣit Pāṭhak (see no. 542). The regular list of the nineteen Somayāgas, however, begins with Vāman Dikṣit Pāṭhak (no. 545, the rest being given in this order: 515, 505, 518, 304, 485, 527, 346 with two yāgas, 537, 490, 528, 552, 520, 531, 522, 501, 529, 526). The holy city has been frequented by people from many states (e.g. nos. 304, 346, 520, 541, 548), and it is not surprising that in addition to the regional vaidikas and paṇḍits, one comes across followers of other Vedic schools, too. The Ṛgveda is represented by both the Āśvalāyana and the Śāṅkhāyana schools, the Yajurveda by those of Mādhyandina, Baudhāyana, and Satyāśāḍha, but the Sāmaveda by the Kauthuma school alone. Among those who have maintained the Vedic and śrauta traditions in Vārāṇasī, particular mention may be made of Bālaśāstrī Rānāḍe, who lived in the nineteenth century and was awarded the title of *bālasarasvatī* for his outstanding knowledge of śruti, smṛti, purāṇa, and darśana at a very young age (see no. 485).

Rshikesh

477. Āhitāgni Bālakramjī, Mādhyandina. Performed the Cāturmāsyas five times at this holy place. (15/1957.)

Varanasi* (all obtained 15/1957.)

478. Aba Dikṣit Purohit, RV (early 20th cent.).

479. Anant Rām Puṇtāmbekar, hotār; living.
480. Ātmārām Vaśīṅkar (? v.l. Bharavāśīlkar), adhvaryu; deceased. (See no. 529.)
481. Bāl Dīkṣit Joṣi (early 20th cent.).
482. Bāl Dīkṣit Kāle (early 20th cent.).
483. Bāl Dīkṣit Toro (20th cent.).
484. Bāla Dīkṣita Yajñamvaru, Āpastamba (20th cent.).
485. Bālaśāstrī Rānāḍe, Satyāśāḍha, Bālasarasvatī (see above, introduction to Vārāṇasī). Performed an Agniṣṭoma around 1880 on a piece of land that he had bought for himself near the Rāj Mandir at the Brahma Ghāṭ, still known as "Yajñasālā" (see also no. 518). Ṛgveda-hautra was adopted in this sacrifice.
486. Bālakṛṣṇa Śāstrī Kelkar (early 20th cent.).
487. Bālaśāstrī Rangappa (20th cent.).
488. Bhavanilalji, Śāṅkhāyana (20th cent.).
489. Bhikoji (v.l. Bhikaji, Bhiku) Dīkṣit Lele, Satyāśāḍha, adhvaryu; deceased (early 20th cent.).
490. Bhikoji (v.l. Bhikaji, Mikoji) Pant Śeṣ, RV, an expert in dharmaśāstra; deceased. Performed an Agniṣṭoma at the end of the 19th cent. at the Durgā Mandir near the Sumer Mandir at Rāmnapur (a town on the east bank of the Gaṅgā, southeast of Vārāṇasī in its immediate neighborhood). Acted also as hotār.
491. Bholanāth (20th cent.).
492. Cintāmaṇi Pālande, udgātār; living.
493. Devakṛṣṇa Tripāthī, udgātār; living.
494. Devanāth (20th cent.).
495. Gajānan Godse, adhvaryu; living.
496. Gaṇeś Bhaṭ Nāpaṭ, udgātār; living.
497. Gaṇeś Dīkṣit Bāpat, adhvaryu; living.
498. Gaṇeś Dīkṣit Dāūjī Bhaṭṭ, adhvaryu; deceased.
499. Gaṇeś Śāstrī Bettigiri (20th cent.).
500. Gaṇeś Vyankateś Sahasrabuddhe (19th cent.). (See no. 551.)
501. Gaṅgādhārjī (Agnihotrī), Mādhyandina, gauṛ-sārasvata. Performed an Agniṣṭoma in the early 20th cent. at Sapta Sāgar, near the Kāśī Devī Mandir and the Town Hall. (See also no. 529).
502. Gaṅgādhār Śāstrī Thatte, Satyāśāḍha (20th cent.).
503. Gopālakṛṣṇa Bhaṭṭ Bhaṭṭ, hotār; deceased.
504. Govindācārya, hotār; deceased.
505. Har Dīkṣit Kāle, RV. Performed an Agniṣṭoma between 1860 and 1896 at the Baṅgālī Bārā, near Gāy Ghāṭ and Viśveśvar-ganj, where is now situated the garden of Rai Bahadur Paṇḍit Madhoram Saṇḍji. (See also nos. 528, 531, 552.)
506. Hariśaṅkarrām Dalpatram, Dvivedī (Śrīmalī, 20th cent.).

507. Kāśīnāth Nāpaṭ, udgātār; living.
508. Kṛṣṇa Dīkṣit Mahadkar, hotār; deceased.
509. Kṛṣṇapant Śāstrī (20th cent.).
510. Lakṣmaṇ(jī) Gaṇorkar, Āśvalāyana, hotār; deceased. (See nos. 521, 522.)
511. Lakṣmīkānt Dīkṣit, adhvaryu; living.
512. Lakṣmīnāth Pāṭhak Saptarṣi, Mādhyandina, adhvaryu; deceased. (20th cent.) (See no. 522.)
513. Maṅgaleśvar Bādal, adhvaryu; living.
514. Mannujī (20th cent.).
515. Namaskāre, Mādhyandina. Performed a Cayana about 1860 at the Reṇukā Mandir, near the Durgā Mandir on the Durgākunḍ.
516. Nandakṛṣṇa Tripāthī, udgātār; living.
517. Nārāyaṇ Dātar, udgātār; living.
518. Pāṇḍuraṅg Dīkṣit Bhaṭ (Bhaṭ), RV. Performed an Agniṣṭoma about 1885-1890 at the Rāj Mandir near Brahma Ghāṭ (between Pāñc Gaṅgā Ghāṭ and Gāy Ghāṭ). (See no. 485).
519. Prabhudattajī (20th cent.).
520. Puruṣottam Śāstrī Drāviḍ, Āpastamba, a Tamil brahmin. Performed an Agniṣṭoma (early 20th cent.) at Hanumān Ghāṭ (near Hariścandra Ghāṭ).
521. Raghunāth (Rac) Gaṇorkar (? v.l. Gavodkar, Gaudkar), hotār; deceased. (See no. 510.)
522. Raghunāthjī (Agnihotrī), Mādhyandina, gauṛ-brāhmaṇ. Performed an Agniṣṭoma around 1920 at Assī Ghāṭ. The ādhvaryava was performed according to the KŚS by Paṇḍit Lakṣmīnāth Pāṭhak Saptarṣi (no. 512), and the hautra according to the ĀŚS by Paṇḍit Lakṣmaṇjī Gaṇorkar (no. 510).
523. Rāmcandra Śrīkṛṣṇa Ratate (20th cent.).
524. Rāmeśvarbhaṭṭ Vaze (early 20th cent.).
525. Ratanjī Dīkṣit, Śāṅkhāyana (20th cent.).
526. Rṣīśaṅkar Tripāthī, Kauthuma, Sāmavedācārya; living. Performed an Agniṣṭoma in April 1966 on the grounds of Kāśīrāja Nyāsa at Śivālā Ghāṭ. Has also functioned as udgātār.
527. Sadāśiv Dīkṣit (v.l. Bhaṭṭ) Jāvjī Bhaṭṭ, Mādhyandina. Performed around 1900 (1898 or 1902?) an Agniṣṭoma at Satī Ca(b)ūtrā in Sukhlāl Sāhu Phāṭak (near Viśvanāth Mandir), where is presently situated the Lacchī Rām Dharmaśālā. The hautra was performed according to the ĀŚS by Raghunāth Gaṇorkar (no. 521).
528. Sadāśiv Śāstrī Soman, RV. Performed an Agniṣṭoma at the end of the 19th century at the Baṅgālī Bārā (see sub no. 505).
529. Śaśibhūṣaṇ (Agnihotrī). Performed an Agniṣṭoma (early 20th

- cent.) at Sapta Sāgar (see no. 501). For the adhvaryu and hotār (following the ĀSS) of this yāga, see nos. 480 and 532 respectively.
530. Siddhanāth, Śakadvīpī (20th cent.).
- (346.) Śiromaṇi Śāstrī. (See sub NEPAL, no. 346.)
531. Śītal Pāṇḍe(ya), Mādhyandina. Performed an Agniṣṭoma (early 20th cent.) at the Baṅgālī Bārā (see sub no. 505).
532. Sitārām Dīkṣit Purohit (v.l. Cītlai), hotār; deceased. See sub no. 529.
533. Śivadatt Tripāthī, udgātār; living.
534. Śivarām Tripāthī, adhvaryu and udgātār; living.
535. Sokhārām Dīkṣit Dāūjī Bhaṭṭ, adhvaryu; living.
536. Somnāth Pāṭhak Saptarṣi, adhvaryu; deceased.
537. Son Dīkṣit Kāle, RV. Performed an Agniṣṭoma at the end of the 19th century on behalf of Rājā Munśī Madho (v.l. Mādhav) Lāl in the village of Bhūlanpur, Rohania thana, Kāśī district (at the junction of the Mall and the Grand Trunk Road on the way to the Allahābād Road). He undertook the Agnihotravrata only from this sacrifice onwards.
538. Śrīdharbhaṭṭ Pacgavkar (20th cent.).
539. Śrīkṛṣṇa Godse, adhvaryu; living.
540. Śrīkṛṣṇa Vāman Dev, hotār; living.
541. Subrahmaṇya Śāstrī Drāviḍ, Āpastamba (20th cent.).
542. Śyāmā Dīkṣit Pāṭhak, Mādhyandina. "The tīrtha purohita of the Hindu emperor Anan[ta]pāla of Delhi, the Vidvān of Kāśī. . . . Performed the rājasūya on behalf of the king of Jaypur, Mān Sinh, 300 years ago" (trans. from *Āj*, May 8, 1966) (See no. 347.)
543. Tatya Kelkar (early 20th cent.).
544. Vāmanācārya, adhvaryu; deceased.
545. Vāman Dīkṣit Pāṭhak, Mādhyandina. Performed a Soma yāga around 1850 or a little earlier (cf. the introduction to Vārāṇasī, above) at Rām Kaṭorā, near the Sanskrit University. (See also no. 346.)
546. M. M. Vamshidhar Śāstrī (from Bengal, 20th cent.).
547. Vayunandan Miśra (20th cent.).
- (304.) Vināyak Śāstrī Gādgīl, RV, from Gwalior. Performed a Sāgnicitya Aptoryāma about 1890-1895 at Bhairav Bāvṛī, on the site of the present Kāśī Gośālā (near the Kōṭvālī or Chief Police Station and Kāl Bhairav Mandir).
548. M. M. Vināyak Śāstrī Vetal (20th cent.).
549. Viṣṇu Śāstrī Sathe (early 20th cent.).
550. Viśvanāth Vāman Dev, ṛgvedaghanapāṭhī, vedācārya, vidyā-

vāridhi; our foremost informant on the Vedic traditions in Vārāṇasī. Has served as hotār; living.

551. Vyaṅkateś Sahasrabuddhe (19th cent.). Cf. no. 500.

552. Yajñeśvar Dīkṣit Mahābaleśvar(kar), RV. Performed an Agniṣṭoma (early 20th cent.) at the Baṅgālī Bara (see sub no. 505).

SUMMARY

The preceding lists have been summarized below in the form of two tables giving statistics of (1) the sacrificers in the various states, and (2) the rarer Soma sacrifices performed. Some annotations are necessary for their correct interpretation. These tables, and especially the catalogues of the sacrifices, represent underestimates, since only the sacrifices that have been expressly mentioned are included (the only exceptions are the Agniṣṭomas implied for the performers of Soma sacrifices of unspecified or different kinds). Moreover, the figures for the various states are not directly comparable. Those for Kerala, being based on the total estimate for the years since 1911 by Erkkara Raman Nambudiri, are probably much closer to the actual number than the figures for the other states. Among the latter, the figures for Andhra Pradesh, Rajasthan and Uttar Pradesh include a considerably higher percentage of deceased persons than the rest.

GEOGRAPHIC DISTRIBUTION OF SACRIFICERS

State	Āhitā- gnis	Soma- yājins	Performers of two or more Soma sacrifices	Maximum num- ber of sacrifices per one person
Andhra Pradesh	200	188	62	20 (no. 150)
Bihar	1			
Karnatak	47	43	15	5 (no. 249)
Kerala	ca. 125	ca. 120	6	2
Madhya Pradesh	1	1	1	2 (no. 304)
Maharashtra	39	26	11	11 (no. 329)
Nepal	3	1	1	3 (no. 346)
Rajasthan	4	3	2	
Tamil Nadu	126	84	21	11-14 (no. 435)
Uttar Pradesh	80	15	1	1
TOTAL	626	481	120	20

TABLE I

THE RARER SOMA SACRIFICES

Name of the sacrifice	Specification	Number of performances	TOTAL
Agnicayana	Unspecified (probably with Aptoryāma)	36	103
	Unspecified, with Aptoryāma	38	
	Unspecified, with other sacrifices	12	
	Sāhasra (cf. TS 5.6.8.2)	3	
	Dviśāhasra (cf. <i>ibid.</i>)	5	
	Triśāhasra (cf. <i>ibid.</i>)	5	
	Kāṭhaka (cf. ĀpŚS 19.11–15)	2	
	Ārunaketuka (cf. BŚS 19.10)	2	
Aptoryāma	(cf. ĀpŚS 14.4.12ff.; 22.13.18–19), mostly Sarvapṛṣṭha (cf. p. 234) and with the Agnicayana	39	75
Vājapeya	Inferred from unspecified Agnicayanas	36	
	Unspecified (2 with unspecified and one with Triśāhasra Cayana)	16	22
	Āpta-vājapeya (cf. ĀpŚS 18.3.6)	3	
	Kuru-vājapeya (cf. ĀpŚS 18.3.7)	2	
	Samsthā-vājapeya (cf. PB 18.6–7; Vājapeya 1955: 19.52)	1	
Atirātra	(cf. ĀpŚS 14.3.8ff.; 22.13.15ff.) (nine with unspecified, one with Triśāhasra Cayana)		15
Paundarika	(cf. ĀpŚS 22.24.8–12)		14
	Unspecified (two with unspecified Cayana)	9	
	Vyūḍha (one with Dvi°, one with Triśāhasra Cayana)	4	
	Samūḍha	1	
Sarvatomukha	(cf. BŚS 18.49; ĀpŚS 22.11.12–13) (one with unspecified Cayana)		11
Atyagniṣṭoma	(cf. BŚS 14.20) (two with unspecified, one with Dviśāhasra Cayana)		9
Bṛhaspatisava	(v.l.° savana; cf. ĀpŚS 22.7.5–16) (once with Kāṭhaka Cayana)		7
Ṣoḍaśī	(cf. ĀpŚS 14.2.2 ff.)		5

Ukthya (cf. ĀpŚS 14.1.6 ff.) (one with Triśāhasra Cayana)	4
Saumika Cāturmāsyas (cf. ĀpŚS 22.8.1 ff.)	2
Diva(h)śyena Iṣṭi(s) (cf. BaudhŚS 19.8; ĀpŚS 19.15.17)	1
Nakṣatra Iṣṭi(s) (cf. TB 3.1; BŚS 28.3–4)	1
Pañcakarakas (?)	1
Sautrāmaṇī (cf. ĀpŚS 19)	1
Agniṣṭut (cf. ĀpŚS 22.6.5 ff.) (with Kāṭhaka Cayana)	1
Sarvajit Mahāvṛata (cf. ĀpŚS 22.1.16 ff.)	1
Dvādaśāha (cf. ĀpŚS 21.1–4)	1
Rājasūya (cf. ĀpŚS 18.8–22)	
Aśvamedha (cf. ĀpŚS 20)	1

TABLE 2 (continued)

THE AUTHENTICITY OF THE MODERN ŚRAUTA TRADITION AND ITS DEVIATIONS

During the Brāhmaṇa period the Vedic sacrifices were the focus of cultural and religious activity, although it cannot be said that each and every individual entitled to perform sacrifices did so. During the Sūtra period, however, when metaphysical concepts based on Upaniṣadic teachings had gained ground, ritualistic practices must have received a setback. Changing social conditions also played their part. Nonetheless, literary and epigraphic evidence, some of which has been cited above, indicates that ritualistic religion survived in the classical and medieval periods in spite of the great ideological revolutions. In this connection, it may be repeated that the epigraphic evidence cannot be taken at face value, since as a rule only the sacrifices performed by royal yajamānas have been recorded. In the 19th and 20th centuries, close contact with the Western world brought about most radical changes in social and economic conditions as well as religious convictions. This new development has dealt a severe blow to the already weakened sacrificial tradition. Despite the adverse conditions, however, we have the names of over five hundred āhitāgnis from recent times, mainly living in relatively isolated corners of peninsular India. These southern states have for a long time been a stronghold of ancient Indian customs that had largely been extinguished in the North during the centuries of Muslim rule. It does seem remarkable that, along with Vedic recitation, the śrauta tradition has been preserved in India for three millennia. Viewed in the light of an epigraphic and literary record, which testifies to a significant series of precedents, if not to a continuous heritage, the modern day śrauta traditions, with their wide distribution, do appear to be genuine survivals of ancient rituals.

In regard to this modern tradition in general, we would therefore not speak of "reconstructions" of the śrauta ritual, as Renou (1953, p. 31) did when referring to the Vājapeya instituted by the Vaidika Saṁsodhana Maṇḍala (cf. pages 200, 230). It is true that in this particular instance professional scholars engaged in the critical study of the ancient ritual texts were involved in the organization of the ritual, which was performed by traditional experts. In the vast majority of the recent performances, however, this is certainly not the case. The traditional śrautins resort to the local prayoga manuals and the customary procedure learnt from the older generation rather than to the study of the Śrauta Sūtras. Thus also the deviations of the modern performances from the injunctions of ancient ritual texts can to some extent be considered as proofs of their authenticity. Taking into consideration that the Śrauta Sūtras themselves often allow for optional procedures, various substitutions, and relaxation of older ritual restrictions, it would indeed be suspicious if modern practice agreed in every detail with that described by the Śrauta Sūtras some two thousand years earlier.

This circumstance of course has some effect on the reliability of the modern śrauta tradition, even if it is accepted as the genuine successor of the ancient ritual. Weber was quite justified in criticizing Haug for his tendency "by far to exaggerate the importance of the *present* views of the native priests or the *traditional oral* tradition in general. In fact he goes even so far, as is rightly pointed out by his reviewer in Bombay, that he puts his own personal experiences and inquiries not only above the sūtras and the commentaries but even above Sāyaṇa. But it is quite plain how considerable errors can or *must* creep into our conception, if we without further ado adopt as an unconditioned model for the antiquity, too, that development of the ritual which it has reached at a given stage or individual today" (translation of Weber 1865, pp. 214 f.). Many of the numerous errors pointed out by Weber and the Bombay reviewer in Haug's work are due to sheer carelessness on Haug's part. But there is certainly reason to be on one's guard when employing present-day śrauta performances for the elucidation of the Vedic texts. A brief survey of some major points of difference may be useful in this context. The reader is referred for more details to two papers by Kashikar (1958, 1964), on which this survey is based.

The cake offered in the Full- and New-Moon sacrifices should actually be prepared in the following manner. A bullock cart or a vessel full of paddy stands to the rear of the fire hall; the adhvaryu takes out paddy in the required quantity; it is pounded and winnowed; and the rice grains are crushed by means of two grinding stones. (Cf. e.g., ĀpŚS 1.17 ff.) Nowadays prepared flour is usually poured out, and the procedures of pounding, winnowing, and crushing are only formally gone through to the accompaniment of the relevant mantras. Even the baking of the cake is sometimes done in a manner rather different from the prescribed one.

The fire hall and the fireplaces are constructed in accordance with the prescriptions of the various Śrauta- and Śulba Sūtras. There are, however, a few differences. Some Śrauta Sūtras mention chambers around the gārhapatya and āhavanīya fires, but these are generally not built. The common practice of making a shed that covers the entire sacrificial area does not find authority in any Śrauta Sūtra. In consequence, the prācīnavamśa shed, which should have a roof with a central beam pointing towards the east, does not have an independent roof any more than do the sadas and the havirdhāna sheds, though each of them is expected to be covered separately.

The somewhat artificial character that the Soma sacrifice, in particular, has, and probably has had for some time, is conspicuous in the miniature form that some of the implements have acquired. Particular mention may here be made of the bullock carts (the havirdhāna carts, the Soma cart) and the chariots (used in the Vājapeya and other sacrifices).

The dakṣiṇās to be given away to the priests in a sacrifice are varied: cows, goats, bulls, horses, other animals, chariots, agricultural land, cloth, gold, and many other substances. It must have always been extremely difficult to procure them, even for rich people, and consequently substitutes are employed. The Mūlhādhyāya-parīṣiṣṭa belonging to the Kātyāyana-Śrauta Sūtra lays down the values of many dakṣiṇās in coins (paṇa). At present only money is given, and the sums are symbolic in comparison to the original gifts. For example, in the Vājapeya one should give to each of the seventeen priests a hundred cows, a chariot, a cart, a horse, an elephant, a golden pectoral, a slave girl, a goat, a ewe, a garment (ĀpŚS 18.3.4), or a hundred cows and sixteen other articles. In the Vājapeya performed at Poona in 1955, "the total of 116 articles was substituted by Rs. 116/- for each priest. Certain other priests received extra *dakṣiṇā* as prescribed." (Vājapeya 1955, p. 59.)

The Cāturmāsya sacrifices, which should be performed at four-month intervals, are nowadays celebrated on consecutive days. Three offerings have been prescribed to be made every year, one at the appearance of each new crop: the Śyāmākāgrayaṇa in the rainy season, the Vrihyāgrayaṇa in the autumn, and the Yavāgrayaṇa in the winter. These rules relate to the economic conditions of North India. In the South, only Vrihyāgrayaṇa is performed, since paddy alone is grown.

The offering of an animal, generally a goat, forms an integral part of many sacrifices. As a compromise between the injunction of the holy writ (śruti) and the tenet of nonviolence preached by the Vaiṣṇava sect, Mādhvācārya introduced the practice of offering an animal of dough (*piṣṭapaśu*). This tradition is being observed even at present by the followers of the Mādhva sect (cf. nos. 341, 342). It became a point of dispute between the traditional ritualists and the followers of the Mādhva sect in the first quarter of this century.

In recent times there has been a growing opposition to the animal

sacrifice from various quarters. In consequence, some Soma sacrifices have been performed without actually offering an animal (cf. no. 318: Nasik 1959). In several sacrifices clarified butter has been used as a substitute (cf. no. 334: Indore 1930, Poona 1955; no. 252: Kotambailu 1957 or 1959; no. 249: Harihareshwar 1961; no. 308: Akalkot 1969). In the Sāgnicitya Atirātra of Panjal, Kerala, 1975, which is described in detail in the present publication, dough tied in a piece of banana leaf was offered in place of an animal because of the public opposition; the substitute was adopted from the similar one used at the domestic rite of Aṣṭakā in Kerala.

In an animal sacrifice the omentum and certain organs are to be offered. Their identification, however, presents a problem, and some are taken only partially. The main reason for this seems to be that in Karnataka, Andhra, and Tamil Nadu the body of the immolated animal (goat) is not dissected, but the organs are extracted by making an aperture in the dead body of the animal. Such a practice can be explained on the basis of the vegetarianism of the brahmins to whom the practice of ritualistic religion has for long been largely restricted.

It appears from the Brāhmaṇa texts that the original Soma plant, the principal offering substance of a Soma sacrifice, had already by that time become difficult to procure. The reason for this was most probably the migration of the Vedic people away from the habitat of the original Soma plant. Its identity remains a problem that Gordon Wasson's mushroom theory has hardly succeeded in solving (cf. Brough 1971). The most likely candidate seems to be some species of Ephedra growing at high altitudes in the Iranian plateau, and imported as haoma by the Parsis of Bombay (cf. Watt 1890, III, 246 ff.). The Brāhmaṇa and Sūtra texts already mention substitutes. Nowadays, as has been the case for a long time, the most commonly used plant is some species of Sarcostemma (cf. Watt 1893: VI, 2, 477 f.); the vernacular names of both the two genera mentioned are often derived from the word *soma*.

The Rgveda, the Yajurveda and the Sāmaveda each have their own sphere of influence in the performance of a Soma sacrifice. A problem arises when a Veda transgresses its specific field. Thus, while the ādhvaryava is the field of the Yajurveda, the Taittirīya Saṃhitā and Brāhmaṇa of the Kṛṣṇa-Yajurveda have recorded the hautra for certain sacrifices. Since the hautra is the field of the Rgveda, the one recorded in the Taittirīya Veda was naturally regarded as the hautraśeṣa. In view of the fact that the hautra for a Soma sacrifice is contained in the Rgveda alone, it has been the age-old practice of most Taittirīyas to adopt in a Soma sacrifice the complete hautra from the Rgveda. The Āpastambins in and around Kallidai-kurichi in the Tirunelveli district of Tamil Nadu, and the Satyāśādhins of western Maharashtra, have adopted the yājuṣa-hautra for pre-Soma purposes. In the 18th century, however, Gopinatha Ganesh Oka, a Maharashtrian of Varanasi and the commentator of Satyāśādhya-Śrauta Sūtra VII-X,

professed that even in a Soma sacrifice performed by a Satyāśādhin the hautra elements of the Taittirīya Veda had to be adopted by the hotar. In the Agniṣṭoma performed in 1872 at Pachwad by Kashinatha Dikshita Karandhikar, a Satyāśādhin of Wai (no. 337), the hautra was performed along these lines, and it was followed by a number of similar Soma sacrifices in western Maharashtra, particularly at Wai and Sangli (cf. nos. 322, 326, 327, 329, 338-340). In most of these the entire hautra was performed not by Rgvedins but by Satyāśādhins.

The coordination of the three Vedas in a Soma sacrifice also involves the question of the relations of their subschools. There are no rules for the coordination of specific schools. Certain traditions, however, have been established, probably as a consequence of neighborly relations. Thus a Rgvedin (Śākala) sacrificer from Maharashtra was required to choose as his adhvaryu a person belonging either to the Baudhāyana or the Āpastamba school. Since neither of these schools were available in the city of Poona, the Taittirīyas there belonging to the Satyāśādhya school, S. R. Rajawade, a Rgvedin āhitāgni (no. 325), chose a follower of the Satyāśādhya school as his adhvaryu in the first quarter of the 20th century. This caused a stir among the priests for some time.

An āhitāgni begins with the performance of the Full-and New-Moon sacrifices, followed by an animal sacrifice, the Cāturmāsya and finally the Agniṣṭoma. The Śrauta Sūtras enumerate seven forms of one-day (*ekāha*) Soma sacrifices, but the practice of performing all of them one by one is very rare. In most parts of India it is customary after the Agniṣṭoma to perform the Aptoryāma sacrifice involving the chanting of stotras characterised by all the stomas and all the pṛṣṭhas (cf. Eggeling 1894, III, p. xx) and combined with the building of the fire altar. In Kerala, however, the Atirātra is performed instead of the Aptoryāma.

Due to the decline of the śrauta tradition, the reduced number of āhitāgnis and sacrificial performances, the skills of the officiating priests have deteriorated. The knowledge of many priests in recent times has been limited to learning the Veda by rote and to a practical knowledge of the prayoga manuals of specific sacrifices, if that. As a result, the performances have often taken a longer time to complete than expected. For example, in an Agniṣṭoma the third pressing should be finished well before the sunset, and in an Atirātra by next morning, but not infrequently the procedure of one day's Soma pressing has been spread over two days.

It is true that changes in the mode of life have led to the introduction of certain practical conveniences, producing a sort of artificiality in the performances. Nevertheless, the study of modern śrauta tradition renders invaluable help in understanding Vedic texts. The history of religions is about to lose this important primary source, and it is to be hoped that the scholarly world will not cease in its efforts to preserve as much of it as

possible: the Kerala Agnicayana project, important as it is, has far from exhausted the potential.

BIBLIOGRAPHY

- Brough, John (1971). "Soma and *Amanita muscaria*." BSOAS 34:2, p. 331-362.
- Caland, Willem (1918). "De ontdekkingsgeschiedenis van den Veda." Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen, Afd. Letterkunde, Reeks 5 deel 3, pp. 261-334.
- Caland, Willem, and Henry, Victor (1906-1907). *L'agniṣoma*. Vols. I-II. Paris.
- Colebrooke, Henry Thomas (1805). "On the *Vēdas* or Sacred Writings of the Hindus," *Asiatic Researches* 8., pp. 369-476 (reprinted in Colebrooke's *Miscellaneous Essays* London, 1837, 1, pp. 9-113).
- Eggeling, Julius (1882-1900). *The Śatapatha-Brāhmaṇa According to the Text of the Mādhyandina School*. Translated. Vols. I-V. The Sacred Books of the East, 12, 26, 41, 43, 44. Oxford.
- Ep. Ind.* = *Epigraphia Indica*. Calcutta.
- Filliozat, Jean (1968). "Le Veda et la littérature tamoul ancienne." pp. 289-300 in *Mélanges d'indianisme à la mémoire de Louis Renou*. Publications de l'Institut de Civilisation Indienne, Sér.-in-8°, 28. Paris.
- Hart, George L., III (1975). *The Poems of Ancient Tamil: Their Milieu and their Sanskrit Counterparts*. Berkeley, Los Angeles, and London.
- Haug, Martin (1861-1862). Letters published in *Briefe an Ewald, aus seinem Nachlass* hrsg. von R. Fick und G. v. Selle. Vorarbeiten zur Geschichte der Göttinger Universität und Bibliothek, 13. Göttingen, 1932.
- ____ (1863). *The Aitareya Brāhmaṇam of the R̥gveda, Edited, Translated and Explained, I-II*. Bombay and London.
- Kane, P. V. (1941). *History of Dharmaśāstra*. Vol. 2. Government Oriental Series, Class B, 6. Poona.
- Kashikar, C. G. (1958). "The Present-day Vedic Rituals in India." pp. 56-64 in *Shastri Rewashankar Becharbhav Trivedi Abhinandana Grantha*. Madras.
- ____ (1964). "The Vedic Sacrificial Rituals Through the Ages." *The Indian Antiquary*, 3rd Series, 1.2, pp. 77-89.
- Kunjunni Raja, K. (1958). *The Contribution of Kerala to Sanskrit Literature*. Madras.
- Majumdar, R. C., and Pusalker, A. D. eds., (1953²-1954). *The History and Culture of the Indian People, II (2d ed.)-III*. Bombay. A. K. Majumdar is joint editor of Vol. III.
- Narain, A. K. (1957). *The Indo-Greeks*. Oxford.
- Parpola, Asko (1973). *The Literature and Study of the Jaiminiya Sāmaveda in Retrospect and Prospect*. Studia Orientalia 43: 6. Helsinki.
- Raghavan, V. (1962). *The Present Position of Vedic Recitation and Vedic Sakhas*. Kumbhakonam.
- Renou, Louis (1950). *Sanskrit et culture*. Paris.
- ____ (1953). *Religions of Ancient India*. Jordan Lectures in Comparative Religion, 1. London.

- ____ (1965). *The Destiny of the Veda in India*. Translated by Dev Raj Chanana. Delhi, Patna, and Varanasi.
- Sircar, D. C. (1965). *Indian Epigraphy*. Delhi, Varanasi, and Patna.
- ____ (1966). *Indian Epigraphical Glossary*. Delhi, Varanasi, and Patna.
- Smith, Vincet A. (1958³). *The Oxford History of India*. 3d ed. Edited by Percival Spear. Oxford.
- Sreekrishna Sarma, E. R. (1968-1976). *Kauṣītaki-Brāhmaṇa, herausgegeben. 1 (Text)-2 (Kommentar)*. Verzeichnis der orientalischen Handschriften in Deutschland, Supplementband 9. Wiesbaden.
- Staal, J. F. (1961). *Nambudiri Veda Recitation*. Disputationes Rheno-Trajectinae, 5. The Hague.
- Sukul, Kuber Nath (1974). *Varanasi Down the Ages*. Patna.
- ____ (1964). "Report on Vedic Rituals and Reactions." *Yearbook of the American Philosophical Society*. Philadelphia, pp. 607-611.
- Vaidyanathan, K. S. (1938-1939). "A Leaf from the Early Cālukya Chronology." *The Quarterly Journal of the Mythic Society* 29, pp. 259-269.
- Vājapeya (1955) = *The Śrauta Ritual and the Vājapeya Sacrifice*. Poona, 1955.
- van Buitenen, J.A.B. (1968). *The Pravargya*. Deccan College, Building Centenary Silver Jubilee Series, 58. Poona.
- Viśvanāth Vāman Dev (1966). "Kāśī kī śraut yāg paramparā" (in Hindi). *Daily Āj* (Varanasi), Mar. 8, 1966.
- Watt, George (1889-1896). *A Dictionary of the Economic Products of India, I-VI*. Calcutta.
- Weber, Albrecht (1852). *The Vājasaneyi-Saṁhitā in the Mādhyandina and Kāṇva-Çākhā, with the Commentary of Mahīdhara, Edited*. The White Yajur-Veda, 1. Berlin and London.
- ____ (1855). *The Śatapatha-Brāhmaṇa in the Mādhyandina-Çākhā, with Extracts from the Commentaries of Sāyaṇa, Harisvāmin, and Dvivedaganga, Edited*. The White Yajur-Veda, 2. Berlin and London.
- ____ (1859). *The Çrautasūtra of Kātyāyana, with Extracts from the Commentaries of Karka and Yājñikadeva*. The White Yajur-Veda, 3. Berlin and London.
- ____ (1865). "Ueber Haug's Aitareya-Brāhmaṇa." *Indische Studien* 9, pp. 177-380.
- ____ (1868). "Zur Kenntniss des vedischen Opferrituals." *Indische Studien* 10, pp. 321-396.
- ____ (1873). "Zur Kenntniss des vedischen Opferrituals (Fortsetzung)." *Indische Studien* 13, pp. 217-292.